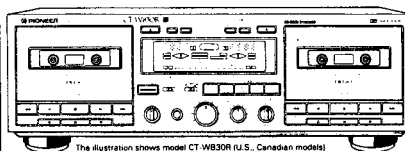


Service Manual



ORDER NO.
ARP2011

STEREO DOUBLE CASSETTE DECK

CT-W830R CT-W840R

CT-W830R AND CT-W840R HAVE FOLLOWING VERSIONS :

Type	Applicable model		Power requirement	Export destination
	CT-W830R	CT-W840R		
KUC	○		AC120V only	U.S.A. and Canada
HEM	○		AC220V, 240V (switchable) *	European continent
HB	○		AC220V, 240V (switchable) *	United Kingdom
SD		○	AC110V, 120V, 220V, 240V (switchable)	Kingdom of Saudi Arabia and General market

*Change the primary wiring of the power transformer.

- This manual is applicable to the CT-W830R/KUC, HEM, HB and CT-W840R/SD types.
- As to the CT-W830R/HEM, HB and CT-W840R/SD types, refer to page 44.
- Ce manuel pour le service comprend les explications de réglage en français.
- Este manual de servicio trata del método ajuste escrito en español.

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4. P.C. BOARDS CONNECTION DIAGRAM.....	19	CT-W840R/SD TYPES.....	44
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This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).

When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

1. SAFETY INFORMATION

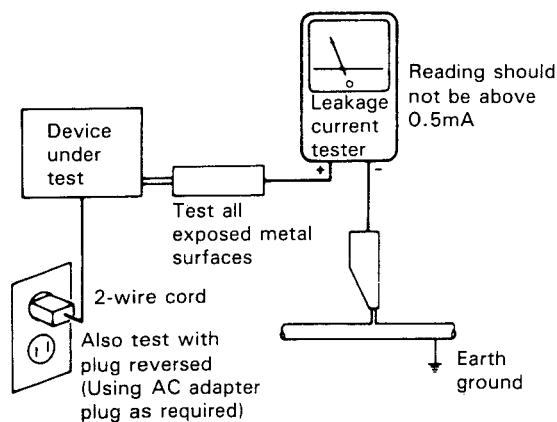
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a Δ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. EXPLODED VIEWS AND PARTS LIST

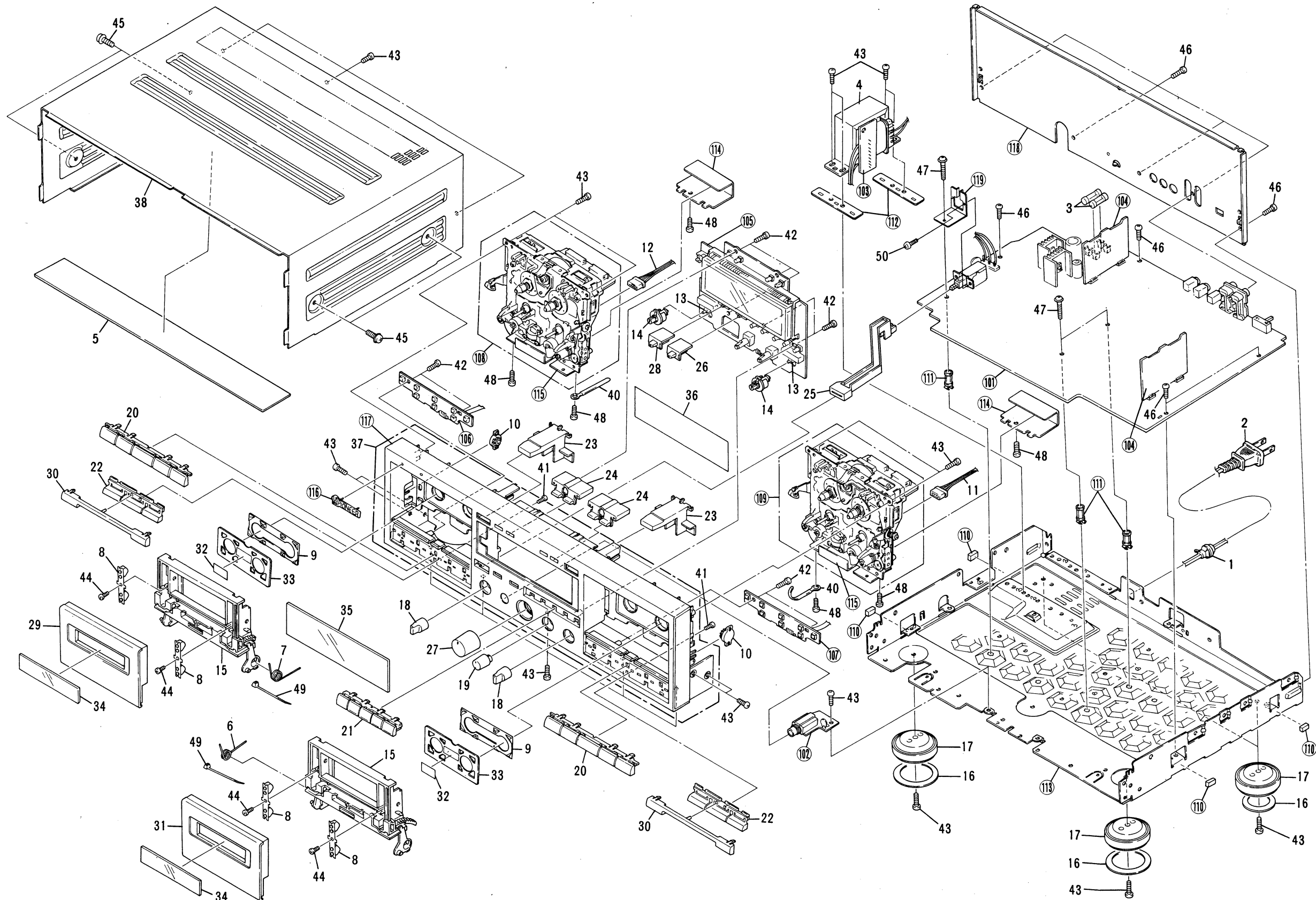
2.1 EXTERIOR

A

B

C

D



A

B

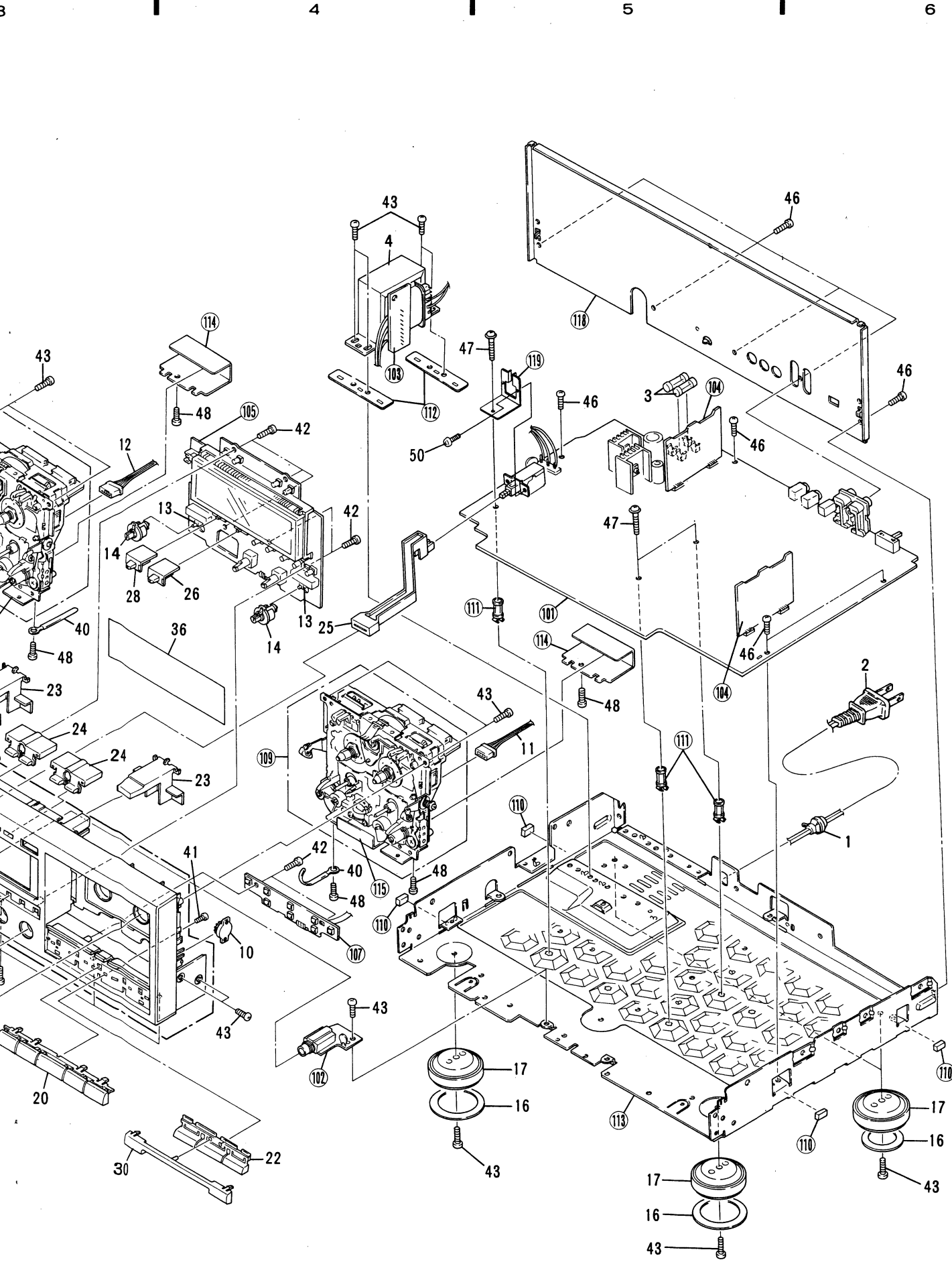
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D

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Par

Ma



NOTES :

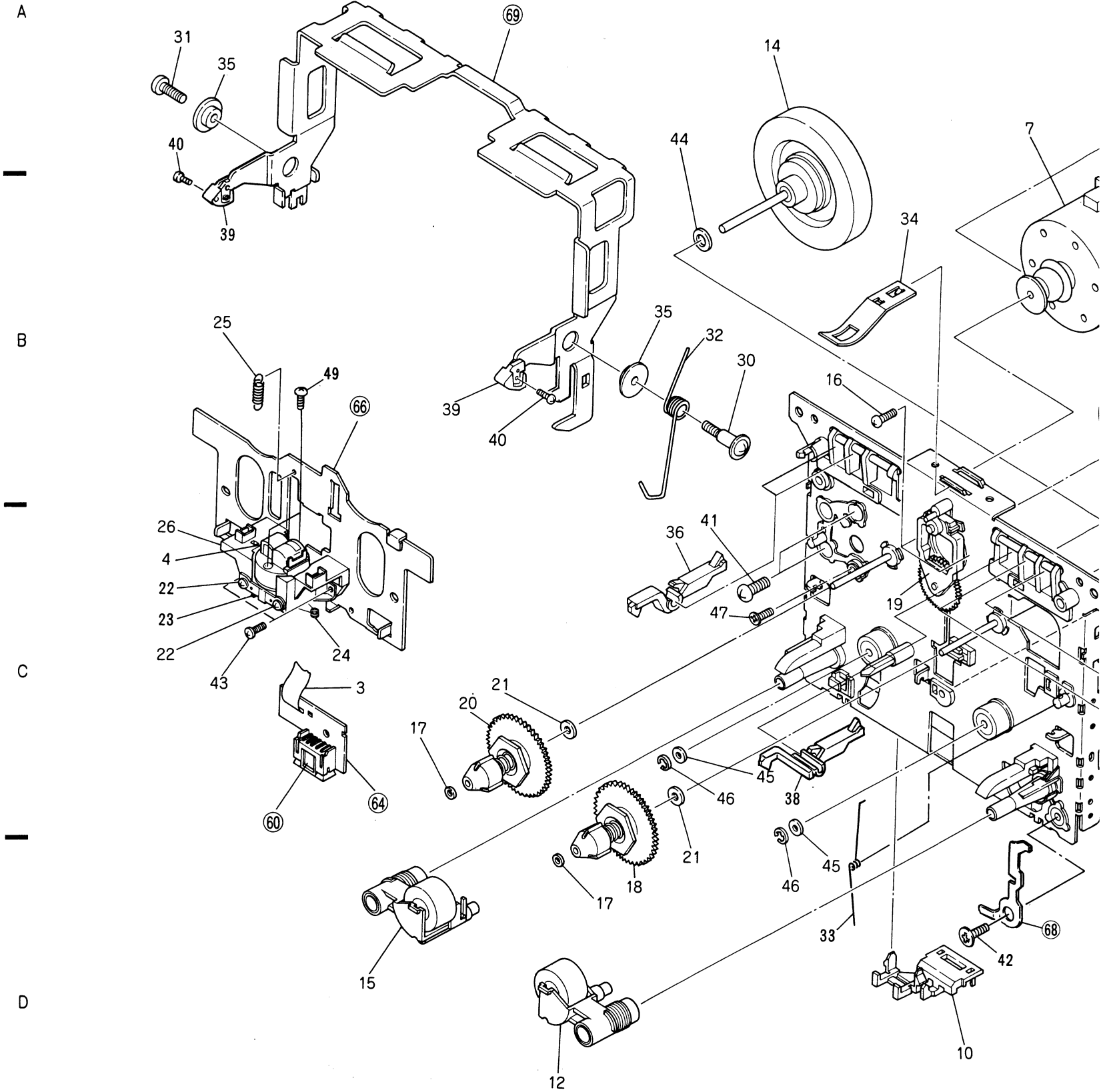
- Parts without part number cannot be supplied.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

Parts List of Exterior

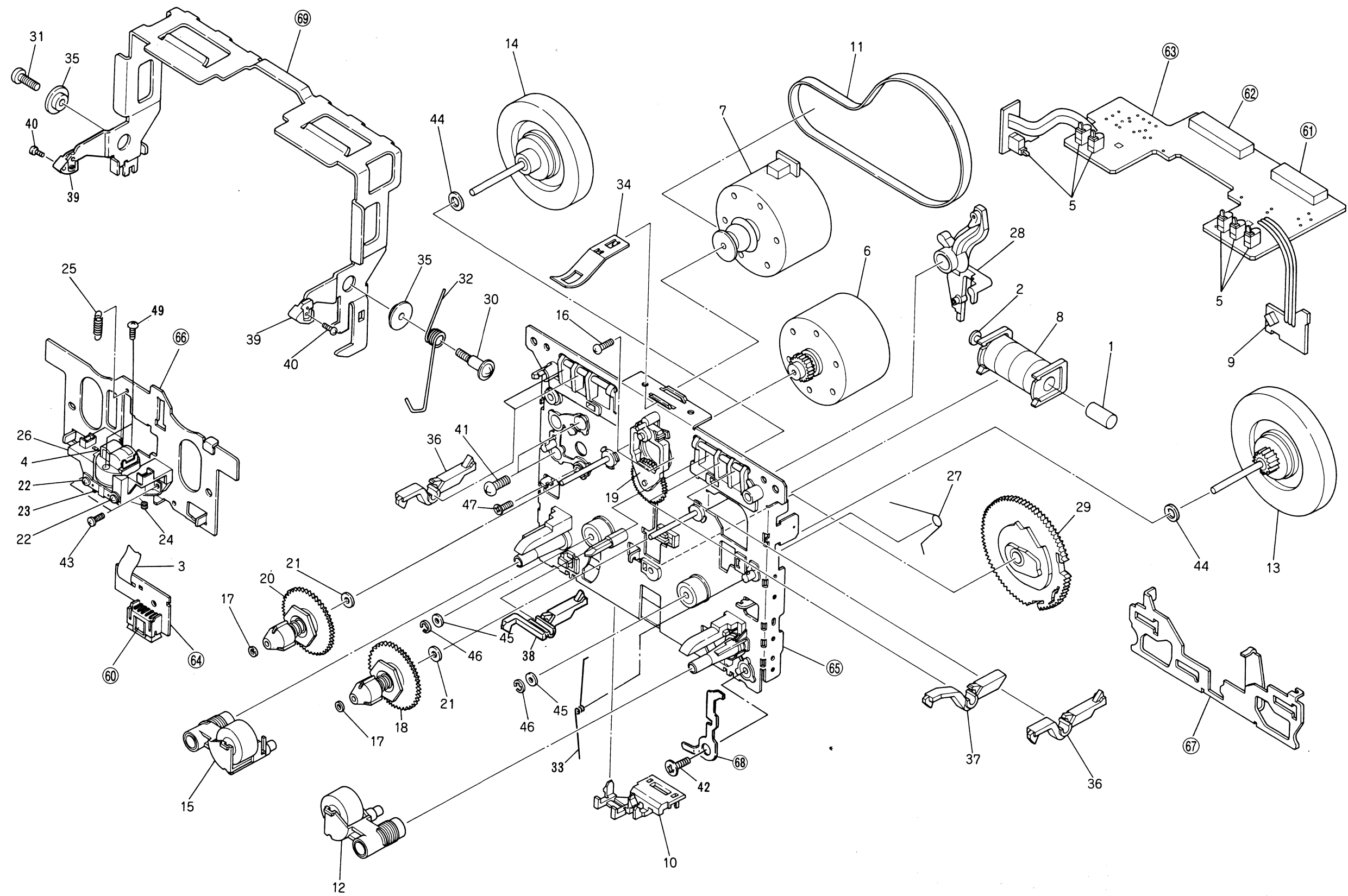
Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
A	1	CM-22C	Strain relife	101			Main unit
	2	RDG1002	AC power cord	102			H.Phone unit
	3	REK1001	Fuse (FU1001, FU1002/1.5A)	103			Transformer 2 unit
	4	RTT1127	Power transformer	104			HX unit
	5	PNB1109	Absorber plate B	105			Display unit
	6	RBH1224	Door spring (L)	106			Operate SW (1) unit
	7	RBH1225	Door spring (R)	107			Operate SW (2) unit
	8	RBK1013	Half pressure spring	108			Mechanism unit (Deck I)
	9	REB1085	Stabilizer B	109			Mechanism unit (Deck II)
	10	REC1005	Damper assembly	110			Multi spacer
B	11	RKP1323	Connector assembly 5P	111			P.C.B. spacer
	12	RKP1332	Connector assembly 5P	112			Power transformer sheet
	13	RNK1522	Switch cap	113			Main chassis
	14	RNK1523	Rotary SW shaft	114			Shield plate
	15	RNT1010	Door pocket	115			Mechanism bracket
	16	VEC1061	Stopper	116			Name plate
	17	VNK1095	Insulator assembly	117			Front panel
	18	RAC1414	Knob B	118			Rear panel
	19	RAC1421	VR knob B	119			SW bracket
	20	RAC1422	Function knob A				
C	21	RAC1423	Function knob C				
	22	RAC1424	Function knob B				
	23	RAC1425	Eject knob				
	24	RAC1426	Counter knob				
	25	RAC1427	Power knob				
	26	RAC1428	Slide knob				
	27	RAC1430	VR knob A				
	28	RAC1431	Slide knob				
	29	RAH1592	Door cover				
	30	RAH1552	REC mold				
D	31	RAH1593	Door cover				
	32	REE-113	Remain display paper				
	33	RAH1483	Stabilizer panel				
	34	RAH1553	Door lens				
	35	RAH1594	FL lens				
	36	RAH1596	FL filter				
	37	RXX1296	Front panel assembly				
	38	RXX1297	Bonnet				
	39		.....				
	40	RNH-184	Cord clammer				
	41	BBZ20P060FMC	Screw				
	42	BBZ30P060FZK	Screw				
	43	BBZ30P080FCC	Screw				
	44	BPZ20P060FMC	Screw				
	45	FBT40P080FZK	Screw				
	46	IBZ30P060FCC	Screw				
	47	IBZ30P150FCU	Screw				
	48	BCZ26P050FMC	Screw				
	49	REC-371	Binder				
	50	PMA30P060FCU	Screw				

Parts List of Mechanism Unit (Deck I)

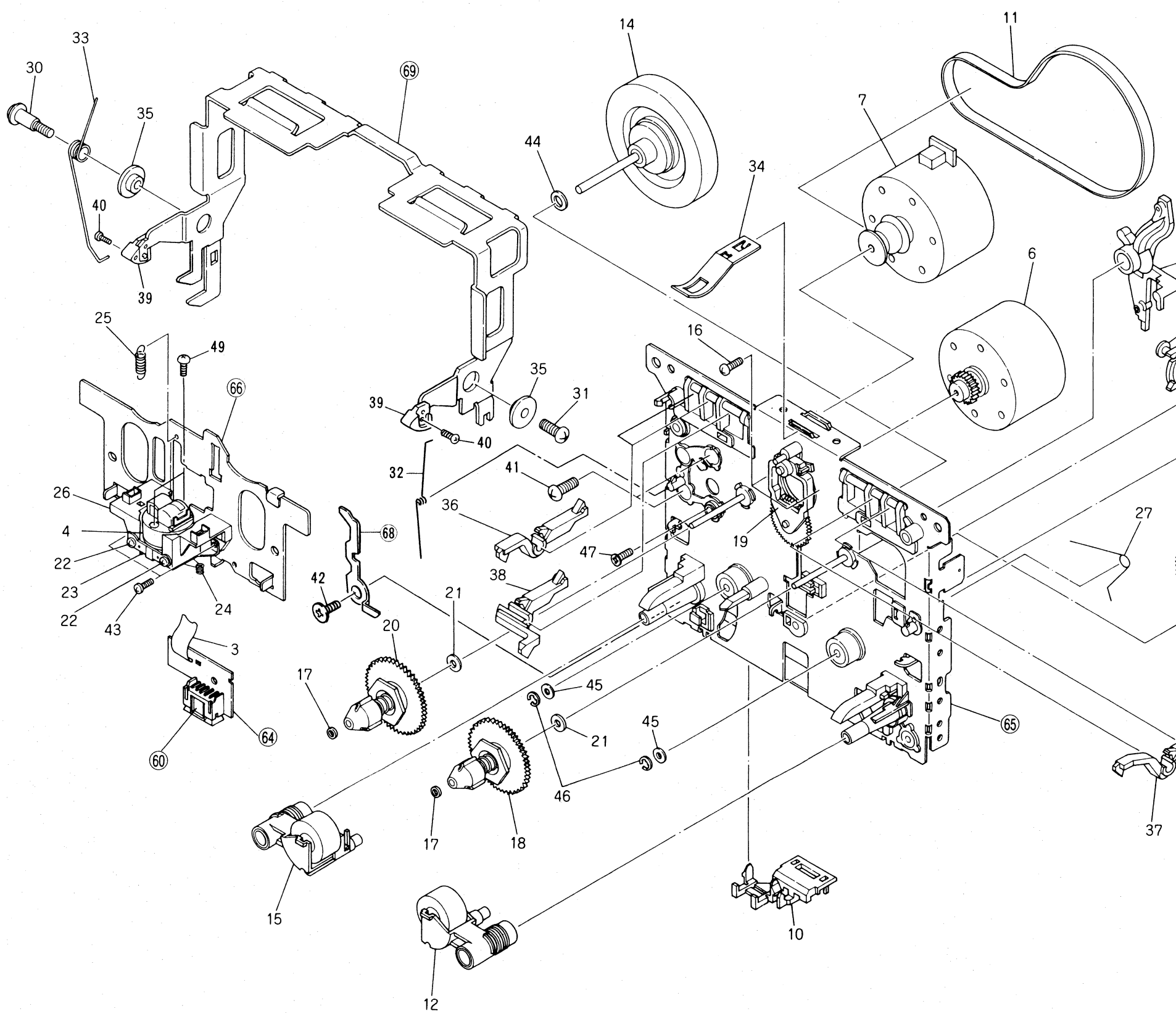
Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	RLA1130	Shaft		31	RBA1079	Screw
	2	RLA1132	Planger		32	RBH1233	Eject lever spring (R)
	3	RNP1232	HD FPC (R/P)		33	RBH1230	Eject prevention spring (R)
	4	RPB1030	R/P, E head		34	RBK1031	Cassette hold spring
	5	RSG1018	Push switch		35	RLA1133	Lever collar (A)
	6	RXM1029	Reel motor block		36	RNK1527	REC detection lever
	7	RXM1030	Main motor block		37	RNK1528	PACK detection lever (L)
	8	RXP1010	Solenoid		38	RNK1537	Metal detection lever (R)
	9	SPI33534FG	Photo transistor		39	RNM-160	Hook
	10	RNK1530	Wire holder		40	PCZ20P040FMC	Screw
	11	REB1131	Main belt		41	PMZ26P050FMC	Screw
	12	RXA1183	Pinch roller assembly		42	RBA1048	Screw
	13	RXA1294	Flywheel assembly		43	RBA1077	Screw
	14	RXA1295	Flywheel assembly		44	WA26D045D025	Washer
	15	RXA1296	Pinch roller assembly (L)		45	WA26D047D050	Washer
	16	RBA1076	Screw		46	YE15FUC	Washer
	17	RBF-057	Washer		47	PBZ30P080FMC	Screw
	18	RXA1184	Reel base block		48		.....
	19	RXA1248	Idler assembly		49	PMZ14P050FNI	Screw
	20	RXC-040	Reel base block		60		Connector (5P)
	21	RBF1038	Washer		61		Connector (8P)
	22	RBA1080	Azimuth screw		62		Connector (10P)
	23	RBK1029	Azimuth spring		63		P.C. board
	24	RBL-085	Rotation spring		64		Head P.C.B.
	25	RBL1003	Head base spring		65		Chassis assembly
	26	RXA1293	Head housing assembly		66		Head base
	27	RBH1239	Slide spring		67		Slide plate
	28	RNK1525	Play arm		68		Eject prevention arm (R)
	29	RNK1526	Cam gear		69		Eject lever (WR)
	30	RBA1078	Screw				

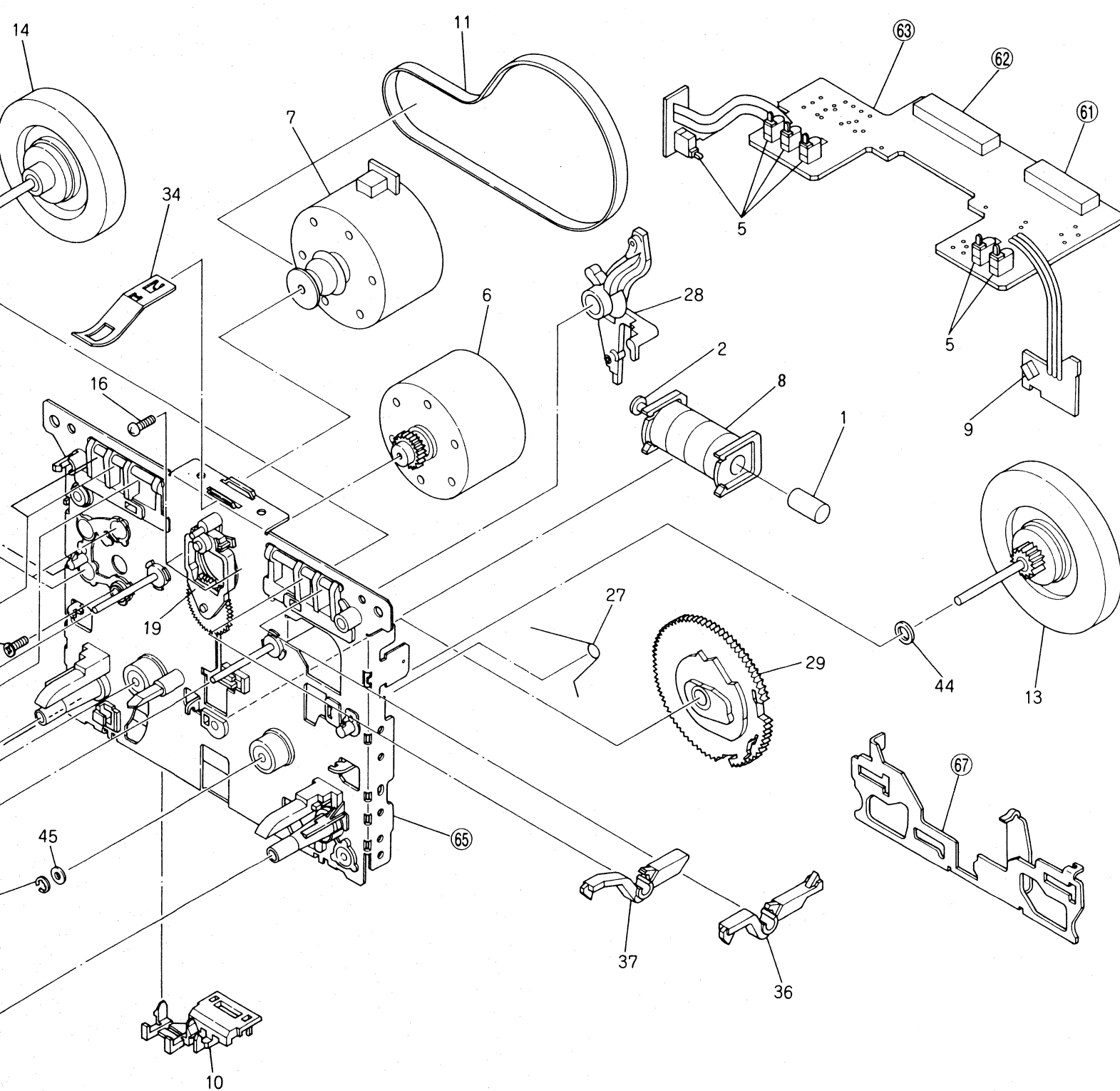


2.2 MECHANISM UNIT (DECK I)



2.3 MECHANISM UNIT (DECK II)





Parts List of Mechanism Un

Mark	No.	Part No.	D
A	1	RLA1130	Shaft
	2	RLA1132	Planger
	3	RNP1232	HD FPC
	4	RPB1030	R/P, E H
	5	RSG1018	Push swi
	6	RXM1029	Reel mot
	7	RXM1030	Main mot
	8	RXP1010	Solenoid
	9	SPI33534FG	Photo tra
	10	RNK1530	Wire hold
	11	REB1131	Main belt
	12	RXA1183	Pinch roll
	13	RXA1294	Flywheel
	14	RXA1295	Flywheel
	15	RXA1296	Pinch roll
B	16	RBA1076	Screw
	17	RBF-057	Washer
	18	RXA1184	Reel base
	19	RXA1248	Idler asse
	20	RXC-040	Reel base
	21	RBF1038	Washer
	22	RBA1080	Azimuth
	23	RBK1029	Azimuth
	24	RBL-085	Rotation
	25	RBL1003	Head bas
	26	RXA1293	Head hou
	27	RBH1239	Slide spr
	28	RNK1525	Play arm
	29	RNK1526	Cam gear
	30	RBA1078	Screw
C	31	RBA1079	Screw
	32	RBA1080	Azimuth
	33	RBA1081	Azimuth
	34	RBA1082	Azimuth
	35	RBA1083	Azimuth
	36	RBA1084	Azimuth
	37	RBA1085	Azimuth
	38	RBA1086	Azimuth
	39	RBA1087	Azimuth
	40	RBA1088	Azimuth
	41	RBA1089	Azimuth
	42	RBA1090	Azimuth
	43	RBA1091	Azimuth
	44	RBA1092	Azimuth
	45	RBA1093	Azimuth
D	46	RBA1094	Azimuth
	47	RBA1095	Azimuth
	48	RBA1096	Azimuth
	49	RBA1097	Azimuth
	50	RBA1098	Azimuth
	51	RBA1099	Azimuth
	52	RBA1100	Azimuth
	53	RBA1101	Azimuth
	54	RBA1102	Azimuth
	55	RBA1103	Azimuth
	56	RBA1104	Azimuth
	57	RBA1105	Azimuth
	58	RBA1106	Azimuth
	59	RBA1107	Azimuth
	60	RBA1108	Azimuth

A

B

C

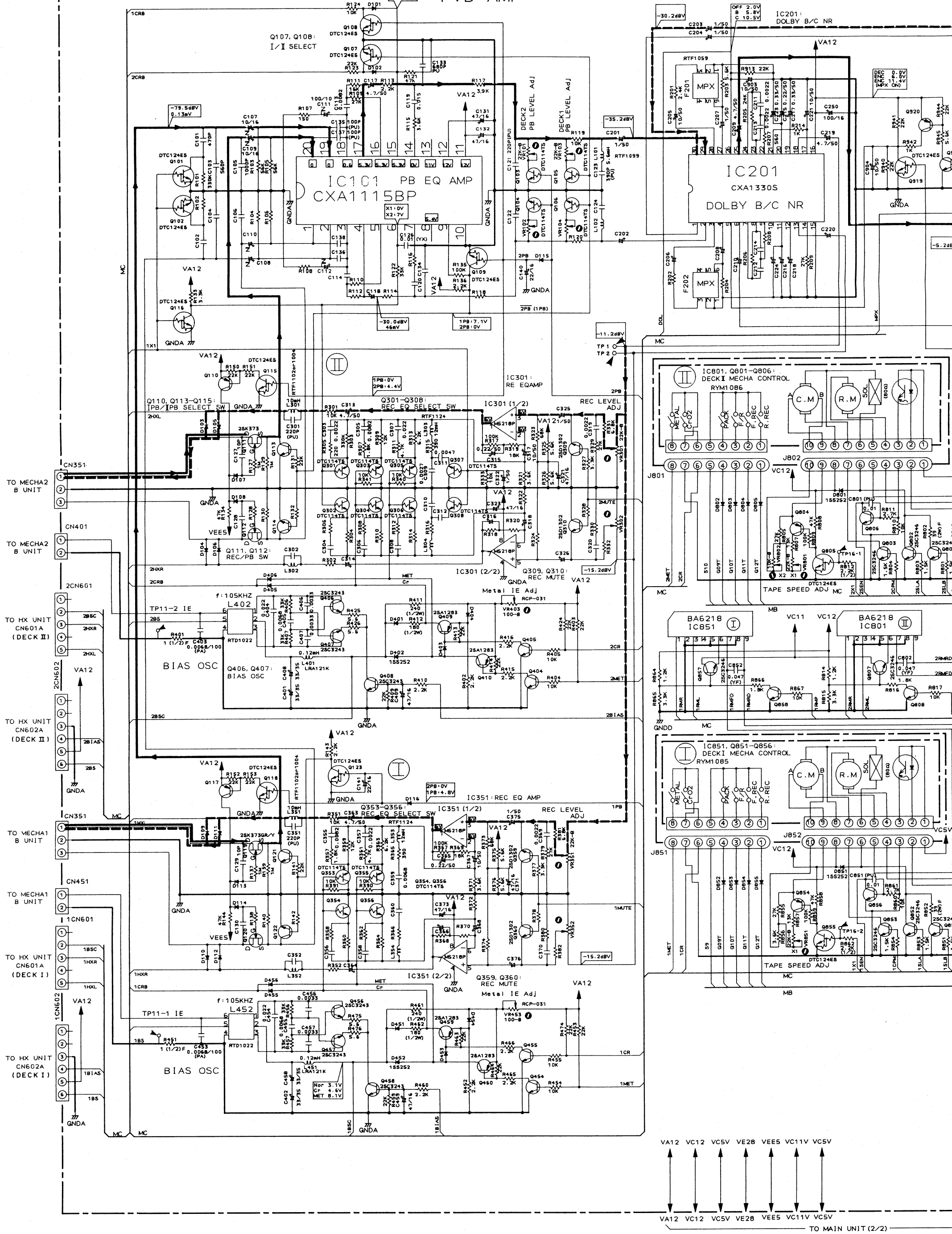
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5 6 10

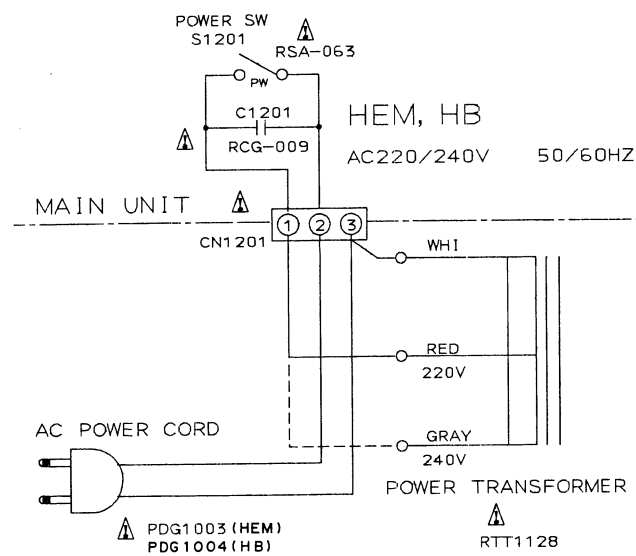
3. SCHEMATIC DIAGRAM

MAIN UNIT (1/2)

P.B AMP



A

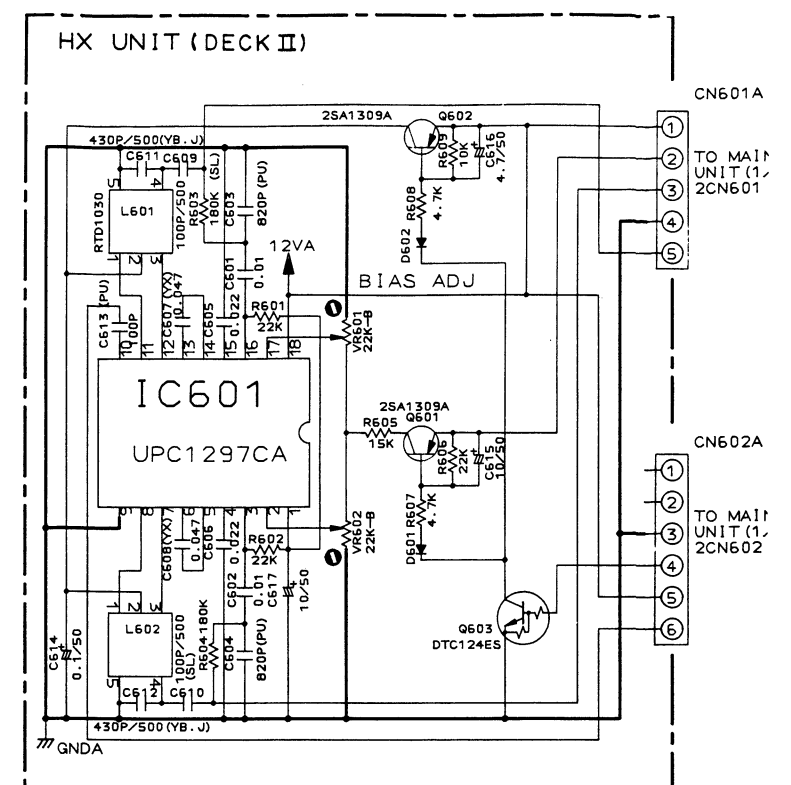
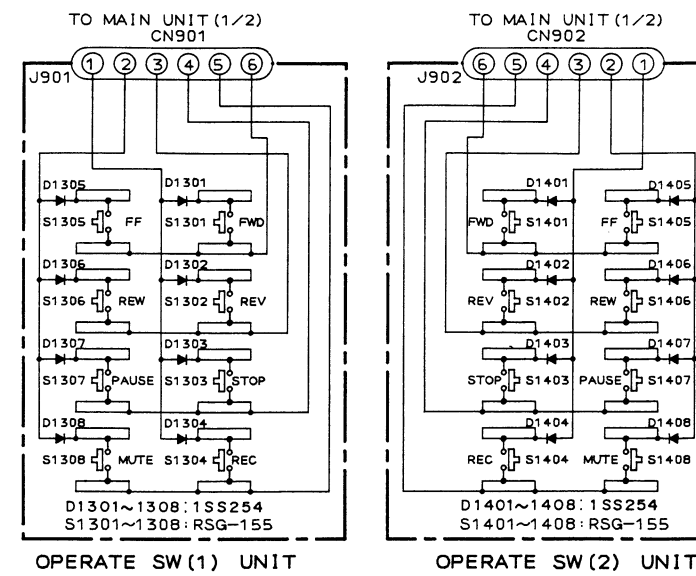


Line Voltage Selection

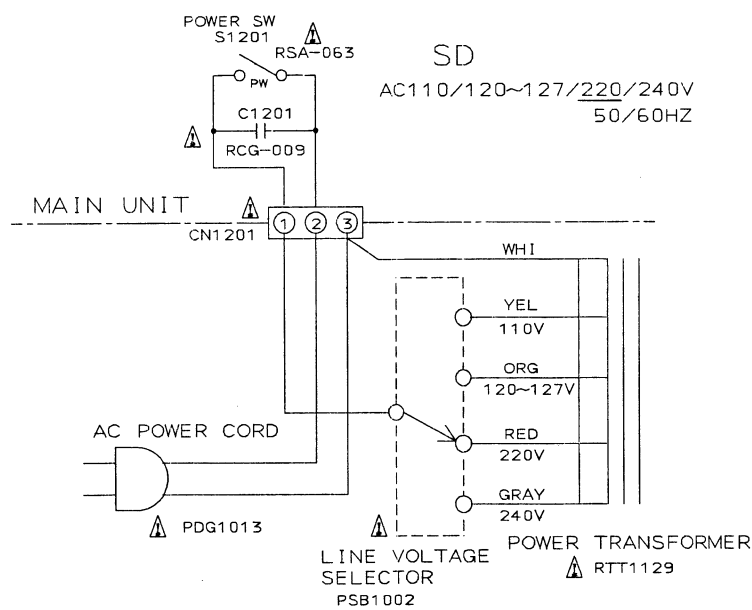
- Line voltage can be changed with the following steps.
1. Disconnect the AC power cord.
 2. Remove the top cover.
 3. Change the connection of the power transformer primary taps.
Note: In this unit, RED wire is used under 220V (HEM type) and GRAY wire under 240V (HB type).
 4. Stick the line voltage label on the rear panel.

Part No.	Description
AAX-193	220V label
AAX-192	240V label

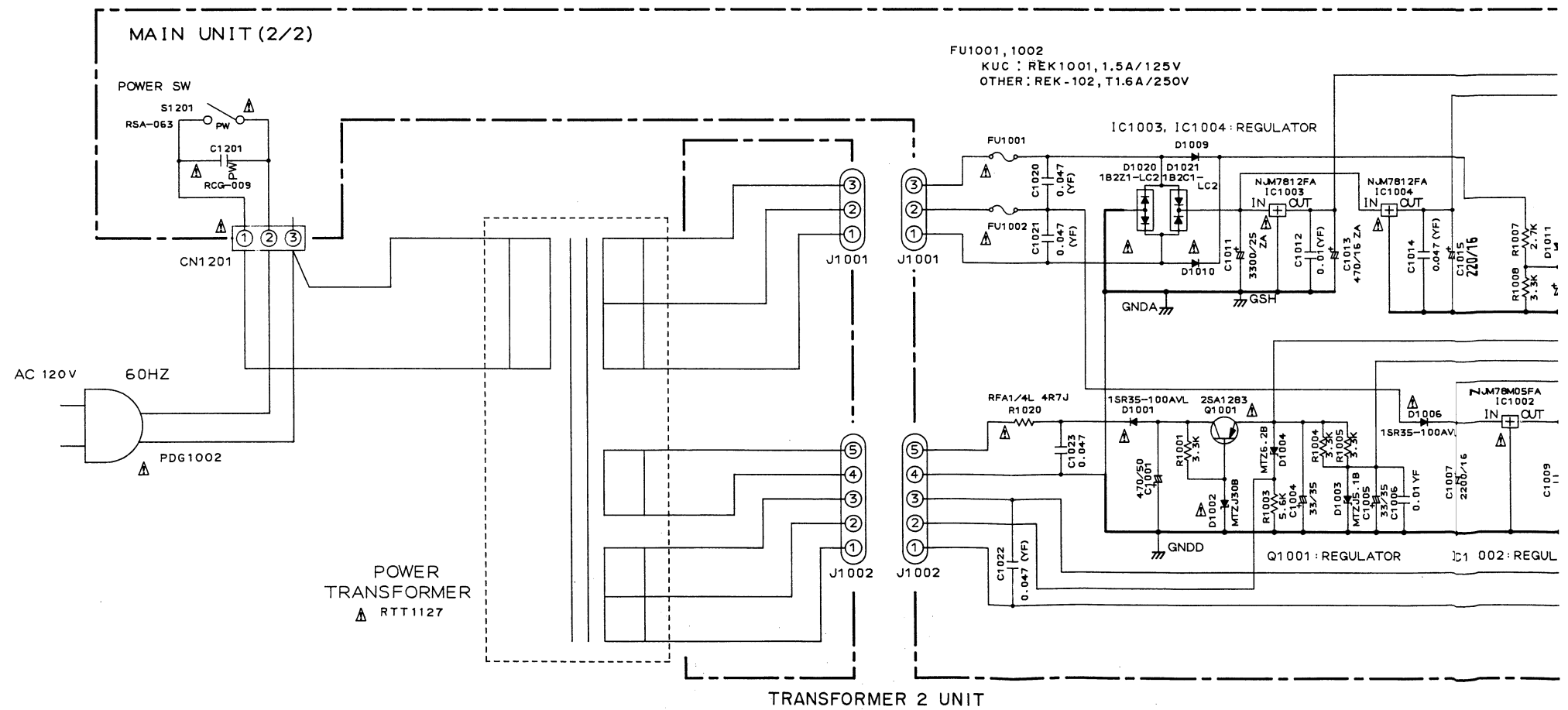
B

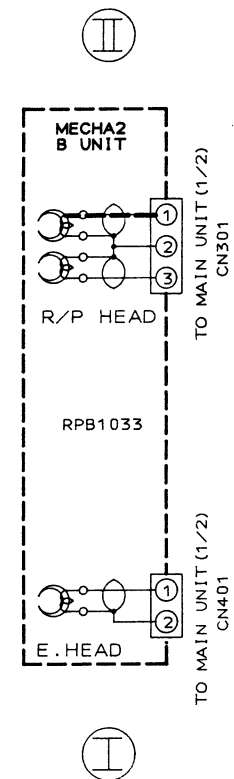


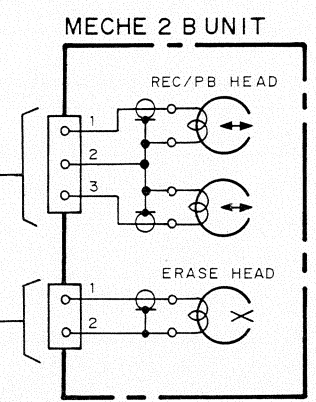
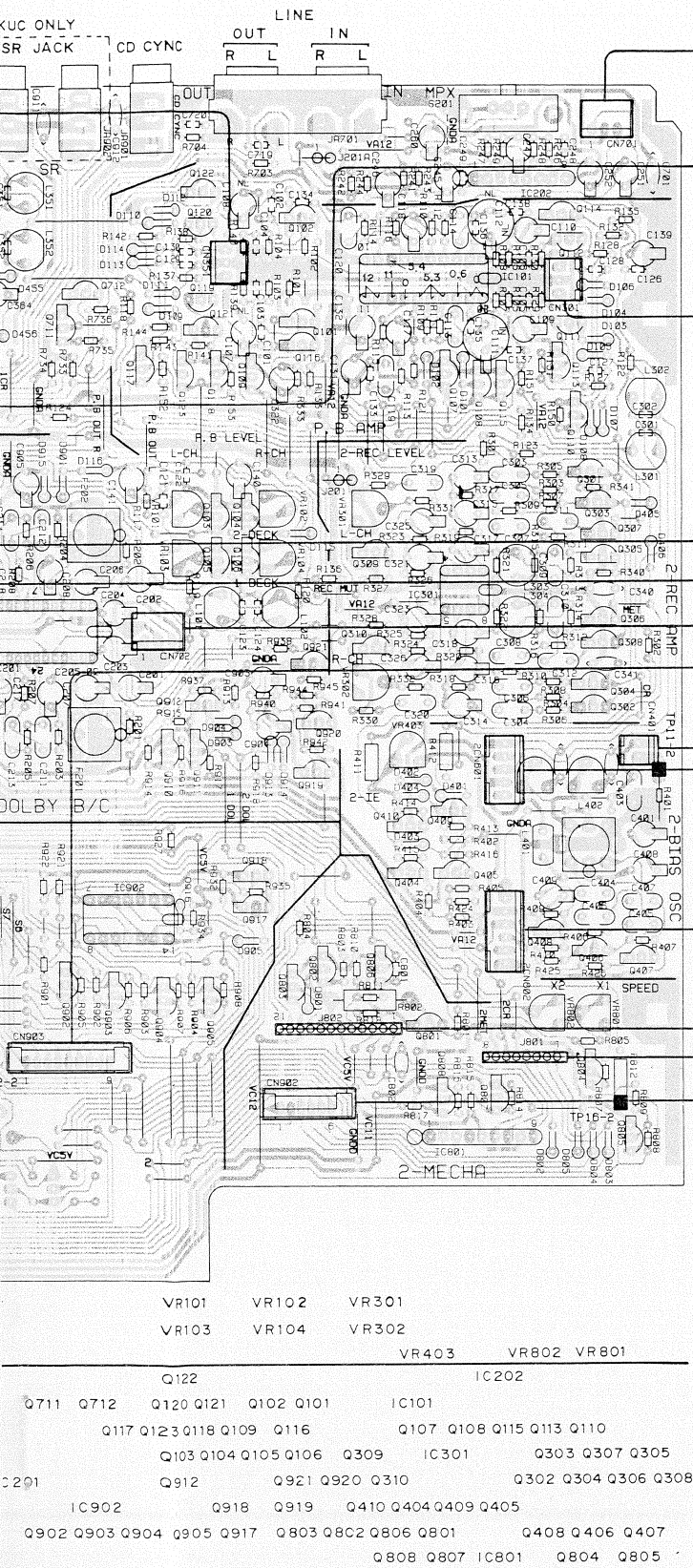
C



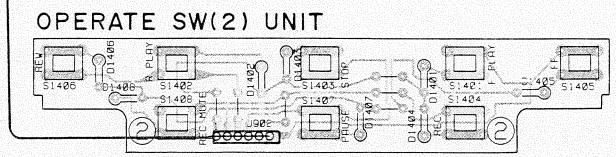
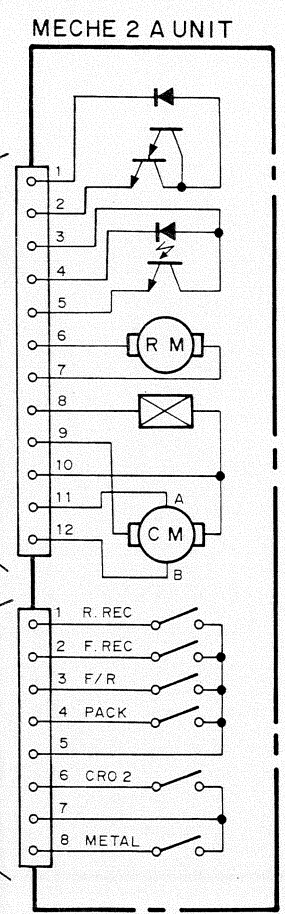
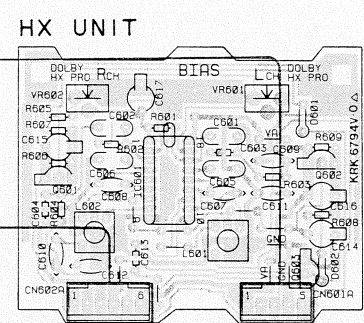
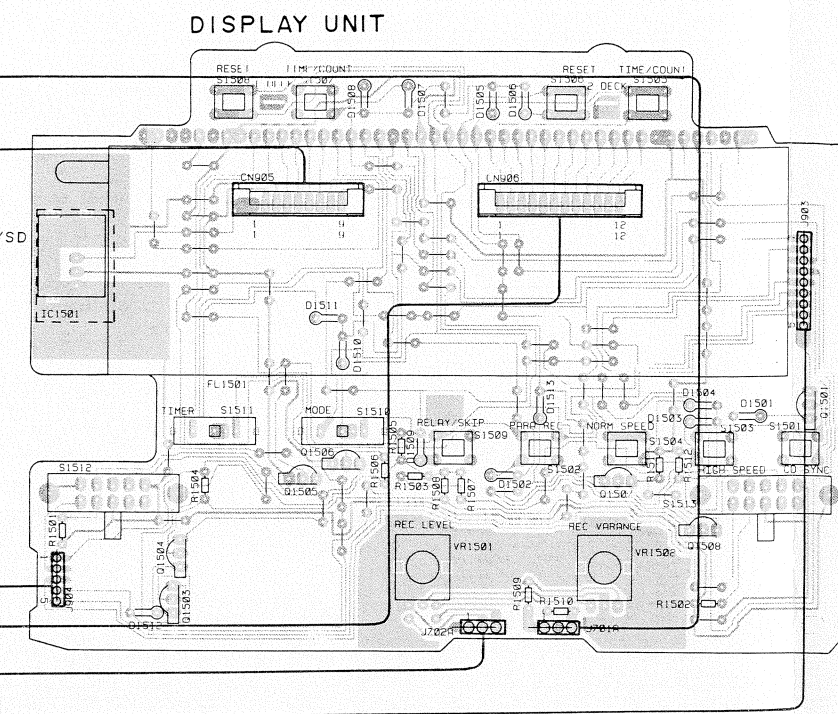
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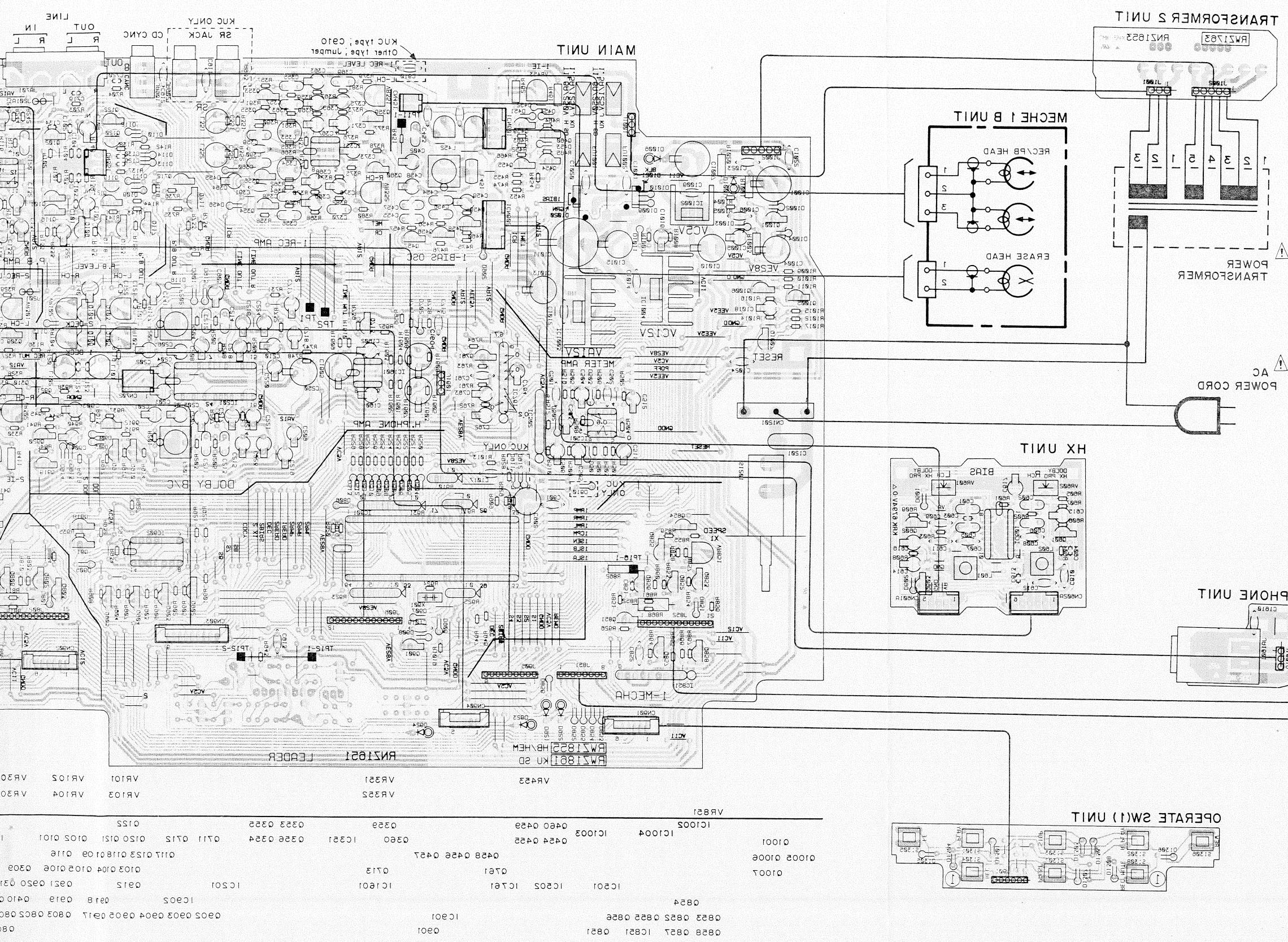


CT-W840R/SD ONLY



PCB pattern diagram indication	Corresponding part symbol	Part name
		Transistor
		FET
		Diode
		Zener diode
		LED
		Varactor
		Tact switch
		Inductor
		Coil
		Transformer
		Filter
		Ceramic capacitor
		Mylar capacitor
		Styro capacitor
		Electrolytic capacitor (Non polarized)
		Electrolytic capacitor (Polarized)
		Electrolytic capacitor (Polarized)
		Power capacitor
		Semi-fixed resistor
		Resistor array
		Resistor
		Resonator
		Thermistor

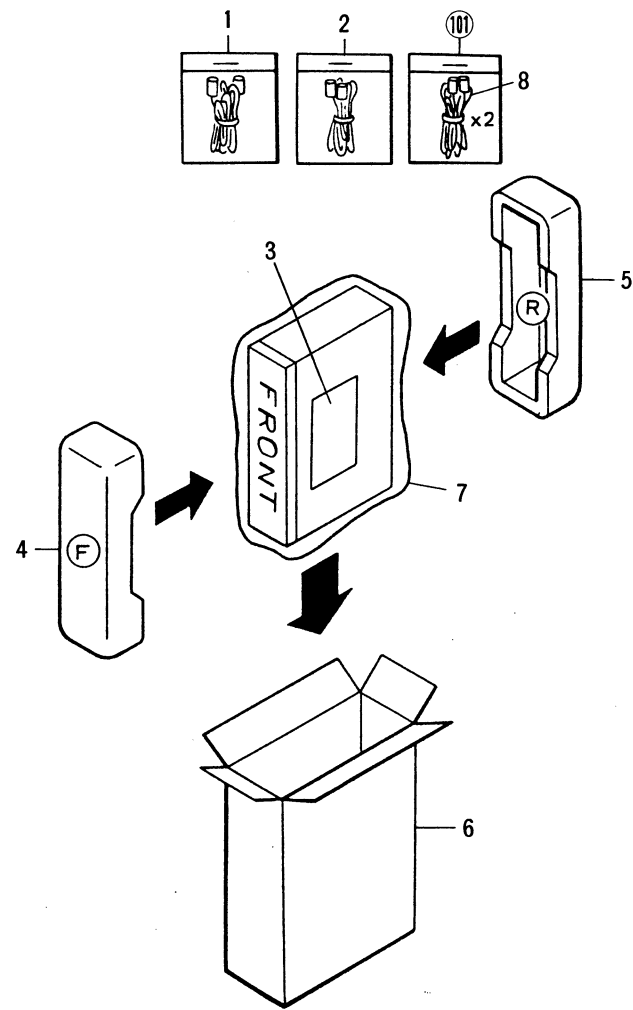
1. This PCB connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with shows negative terminal.
4. The diode marked with shows cathode side.
5. The transistor terminal marked with shows emitter.



5. PACKING

Parts List

Mark	No.	Part No.	Description
	1	PDE-319	Mini connection cord
	2	RDE1018	Control cord
	3	RRB1064	Operating instructions (English)
	4	RHA1044	Pad F
	5	RHA1045	Pad R
	6	RHG1180	Packing case
	7	RHX-034	Sheet
	8	RDE-010	Connection cord
101			Connection cord assembly



6. B.C.B's PARTS LIST

NOTES:

- Parts without part number cannot be supplied.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.
Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%)
560 Ω → 56 × 10¹ → 561 RD1/4PS 561J
47k Ω → 47 × 10³ → 473 RD1/4PS 473J
0.5 Ω → 0R5 RN2H 0R5K
1 Ω → 010 RS1P 010K
Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).
5.62k Ω → 562 × 10¹ → 5621 RN1/4SR 5621F

Mark	No.	Symbol & Description	Part No.	Mark	No.	Symbol & Description	Part No.
H.PHONE UNIT							
CAPACITORS							
		C1610 CERAMIC CAPACITOR	CKCYF473Z50			C611, 612 CERAMIC CAPACITOR	RCG1005
OTHERS						C613 AXIAL CAPACITOR	CKPUYB101K50
		JA1601 JACK	RKN1002			C614 ELECTR. CAPACITOR	CEASR10M50
TRANSFORMER 2 UNIT						C615 ELECTR. CAPACITOR	CEAS100M50
						C616 ELECTR. CAPACITOR	CEAS4R7M50
						C617 ELECTR. CAPACITOR	CEAS100M50
				RESISTORS			
						R601-609 CARBONFILM RESISTOR	RD1/6PM□□□J
						VR601, 602 VR	VRTB6HS223
OPERATE SW (1) UNIT				MAIN UNIT			
SEMICONDUCTORS				SEMICONDUCTORS			
		D1301-1308 DIODE	1SS254			IC101	CXA1115BP
SWITCHES						IC201	CXA1330S
		S1301-1308 SWITCH	RSG-155			IC202	M5218L
OPERATE SW (2)UNIT						IC301	M5218P
SEMICONDUCTORS						IC351	M5218P
		D1401-1408 DIODE	1SS254			IC501	M5218P
SWITCHES						IC502	M5233L
		S1401-1408 SWITCH	RSG-155			IC761	BA335
HX UNIT						IC801	BA6218
SEMICONDUCTORS						IC851	BA6218
		IC601	UPC1297CA			IC901	PD3148
		Q601, 602 TRANSISTOR	2SA1309A			IC902	TC4066BP
		Q603 TRANSISTOR	DTC124ES	⚠		IC1002 REGULATOR IC	NJM78M05FA
		D601, 602 DIODE	1SS254	⚠		IC1003, 1004	NJM7812FA
COILS/TRANSFORMERS						IC1601	M5218P
		L601, 602	RTD1030			Q101, 102 TRANSISTOR	DTC124ES
CAPACITORS						Q103-106 DIGITAL TRANSISTOR	DTC114TS
		C601, 602 AUDIO FILM CAPACITOR	CFTXA103J50			Q107-109 TRANSISTOR	DTC124ES
		C603, 604 AXIAL CAPACITOR	CKPUYB821K50			Q110 TRANSISTOR	2SA1309A
		C605, 606 AUDIO FILM CAPACITOR	CFTXA223J50			Q111, 112 N-FET	2SK373
		C607, 608 CERAMIC CAPACITOR	CGCYX473K25			Q113, 114 TRANSISTOR	2SC3311A
		C609, 610 CERAMIC CAPACITOR	CCCSL101K500			Q115, 116 TRANSISTOR	DTC124ES
						Q117 TRANSISTOR	2SA1309A
						Q118 TRANSISTOR	DTC124ES
						Q119, 120 N-FET	2SK373

Mark	No.	Symbol & Description	Part No.
	Q121, 122	TRANSISTOR	2SC3311A
	Q123	TRANSISTOR	DTC124ES
	Q301-308	DIGITAL TRANSISTOR	DTC114TS
	Q309, 310	TRANSISTOR	2SD1302
	Q353-356	DIGITAL TRANSISTOR	DTC114TS
	Q359, 360	TRANSISTOR	2SD1302
	Q404, 405	TRANSISTOR	2SC3311A
	Q406-408		2SC3243
	Q409, 410		2SA1283
	Q454, 455	TRANSISTOR	2SC3311A
	Q456-458		2SC3243
	Q459, 460		2SA1283
	Q711, 712	TRANSISTOR	2SD1302
	Q713	TRANSISTOR	2SA1309A
	Q761	TRANSISTOR	2SD1302
	Q801-803	TRANSISTOR	2SC3246
	Q804	TRANSISTOR	2SA1309A
	Q805	TRANSISTOR	DTC124ES
	Q806	TRANSISTOR	2SC3311A
	Q807	TRANSISTOR	2SC3246
	Q808	TRANSISTOR	2SC3311A
	Q851-853	TRANSISTOR	2SC3246
	Q854	TRANSISTOR	2SA1309A
	Q855	TRANSISTOR	DTC124ES
	Q856	TRANSISTOR	2SC3311A
	Q857	TRANSISTOR	2SC3246
	Q858	TRANSISTOR	2SC3311A
	Q901	TRANSISTOR	DTC124ES
	Q902-905	TRANSISTOR	2SA1309A
	Q910-912	TRANSISTOR	2SC3311A
	Q917	TRANSISTOR	2SA1309A
	Q918, 919	TRANSISTOR	DTC124ES
	Q920	TRANSISTOR	2SA1309A
	Q921	TRANSISTOR	2SC3311A
△	Q1001		2SA1283
	Q1005	TRANSISTOR	2SA1309A
	Q1006, 1007	TRANSISTOR	2SC3311A
	D101-116	DIODE	1SS254
	D401	DIODE	1SS254
	D402	DIODE	1SS252
	D403-406	DIODE	1SS254
	D451	DIODE	1SS254
	D452	DIODE	1SS252
	D453-456	DIODE	1SS254
	D501-513	DIODE	1SS254
	D702		MTZJ4. 3B
	D801	DIODE	1SS252
	D802-806	DIODE	1SS254
	D851	DIODE	1SS252
	D852-856	DIODE	1SS254
	D901-908	DIODE	1SS254
	D910-916	DIODE	1SS254
	D921-924	DIODE	1SS254
△	D1001	DIODE	1SR35-100AVL
△	D1002		MTZJ30B

Mark	No.	Symbol & Description	Part No.
△	D1003	ZENER DIODE	MTZJ5. 1B
△	D1004		MTZ6. 2B
△	D1006	DIODE	1SR35-100AVL
	D1009-1011	DIODE	1SS254
△	D1020		1B2ZI-LC2
△	D1021		1B2C1-LC2
SWITCHES			
	S201		RSH1022
△	S1201	SWITCH	RSA-063
COILS/TRANSFORMERS			
	L101, 102	COIL	RTF1099
	L301, 302	COIL	RTF1004
	L303, 304	COIL	RTF1124
	L351, 352	COIL	RTF1004
	L353, 354	COIL	RTF1124
	L401		LRA121K
	L402	COIL	RTD1022
	L451		LRA121K
	L452	COIL	RTD1022
	F201, 202	FILTER	RTF1059
CAPACITORS			
	C101, 102	PL. STYRENE CAPACITOR	CQSA471J50
	C103, 104	PL. STYRENE CAPACITOR	CQSA561J50
	C105, 106	PL. STYRENE CAPACITOR	CQSA102J50
	C107-110	ELECTR. CAPACITOR	CEANL100M16
	C111, 112	ELECTR. CAPACITOR	CEANL101M10
	C113, 114		CFTXA822J50
	C117, 118	ELECTR. CAPACITOR	CEAS4R7M50
	C119, 120	AUDIO FILM CAPACITOR	CFTXA223J50
	C121, 122	AXIAL CAPACITOR	CKPUYB221K50
	C123, 124	AXIAL CAPACITOR	CKPUYB391K50
	C126	CERAMIC CAPACITOR	CKCYF103Z50
	C127-130	AXIAL CAPACITOR	CCPUSL100J50
	C131, 132	ELECTR. CAPACITOR	CEAS470M16
	C133, 134	AXIAL CAPACITOR	CKPUYB681K50
	C135-138	AXIAL CAPACITOR	CKPUYB101K50
	C140, 141	ELECTR. CAPACITOR	CEAS220M16
	C201-204	ELECTR. CAPACITOR	CEAS010M50
	C205, 206	ELECTR. CAPACITOR	CEAS100M50
	C207, 208	ELECTR. CAPACITOR	CEAS010M50
	C209, 210	ELECTR. CAPACITOR	CEAS4R7M50
	C211-214		CFTXA222J50
	C215, 216	ELECTR. CAPACITOR	CEASR22M50
	C217, 218	ELECTR. CAPACITOR	CEASR33M50
	C219, 220	ELECTR. CAPACITOR	CEAS4R7M50
	C221	ELECTR. CAPACITOR	CEAS100M50
	C223, 224	ELECTR. CAPACITOR	CEASR33M50
	C245, 246	ELECTR. CAPACITOR	CEAS010M50
	C247	ELECTR. CAPACITOR	CEAS470M16
	C248, 249	AXIAL CAPACITOR	CKPUYB101K50
	C250	ELECTR. CAPACITOR	CEAS101M16
	C251, 252	ELECTR. CAPACITOR	CEAS100M50
	C260	ELECTR. CAPACITOR	CEAS470M16
	C301, 302	AXIAL CAPACITOR	CKPUYB221K50

Mark	No.	Symbol & Description	Part No.
	C303, 304		CFTXA222J50
	C305, 306		CFTXA822J50
	C307, 308	AUDIO FILM CAPACITOR	CFTXA223J50
	C309, 310		CFTXA272J50
	C311, 312	AUDIO FILM CAPACITOR	CFTXA472J50
	C313, 314	ELECTR. CAPACITOR	CEAS4R7M50
	C315, 316	ELECTR. CAPACITOR	CEASR22M50
	C317, 318	ELECTR. CAPACITOR	CEAS100M50
	C319, 320		CFTXA222J50
	C321	ELECTR. CAPACITOR	CEAS470M16
	C322	ELECTR. CAPACITOR	CEAS010M50
	C323	ELECTR. CAPACITOR	CEAS470M16
	C325, 326	ELECTR. CAPACITOR	CEAS010M50
	C351, 352	AXIAL CAPACITOR	CKPUYB221K50
	C355, 356		CFTXA822J50
	C357, 358	AUDIO FILM CAPACITOR	CFTXA223J50
	C359, 360		CFTXA682J50
	C363, 364	ELECTR. CAPACITOR	CEAS4R7M50
	C365, 366	ELECTR. CAPACITOR	CEASR22M50
	C367, 368	ELECTR. CAPACITOR	CEAS100M50
	C369, 370		CFTXA222J50
	C371	ELECTR. CAPACITOR	CEAS470M16
	C373	ELECTR. CAPACITOR	CEAS470M16
	C375, 376	ELECTR. CAPACITOR	CEAS010M50
	C401, 402	ELECTR. CAPACITOR	CEAS330M35
	C403		CQPA682J100
	C404	AUDIO FILM CAPACITOR	CFTXA223J50
	C405		CFTXA682J50
	C406, 407	AUDIO FILM CAPACITOR	CFTXA332J50
	C408	ELECTR. CAPACITOR	CEAS330M35
	C409	ELECTR. CAPACITOR	CEAS470M16
	C453		CQPA682J100
	C454	AUDIO FILM CAPACITOR	CFTXA223J50
	C455		CFTXA682J50
	C456, 457	AUDIO FILM CAPACITOR	CFTXA332J50
	C458	ELECTR. CAPACITOR	CEAS330M35
	C459	ELECTR. CAPACITOR	CEAS470M16
	C501, 502	CERAMIC CAPACITOR	CKCYF473Z50
	C503	ELECTR. CAPACITOR	CEAS331M16
	C504	ELECTR. CAPACITOR	CEAS330M35
	C505, 506	ELECTR. CAPACITOR	CEASR47M50
	C511, 512	ELECTR. CAPACITOR	CEAS100M50
	C701	CERAMIC CAPACITOR	CKCYF473Z50
	C715	CERAMIC CAPACITOR	CKCYF103Z50
	C717, 718	ELECTR. CAPACITOR	CEASR10M50
	C719, 720	AXIAL CAPACITOR	CKPUYB101K50
	C761	CERAMIC CAPACITOR	CKCYF473Z50
	C762, 763	ELECTR. CAPACITOR	CEASR10M50
	C764	ELECTR. CAPACITOR	CEASR47M50
	C801		CKPUY103M16
	C802	CERAMIC CAPACITOR	CKCYF473Z50
	C851		CKPUY103M16
	C852	CERAMIC CAPACITOR	CKCYF473Z50
	C901	CERAMIC CAPACITOR	CKCYF103Z50

Mark	No.	Symbol & Description	Part No.
	C902	ELECTR. CAPACITOR	CEAS102M10
	C903, 904	ELECTR. CAPACITOR	CEAS100M50
	C905	ELECTR. CAPACITOR	CEAS470M16
	C910	ELECTR. CAPACITOR	CEASR33M50
	C911	CERAMIC CAPACITOR	CKCYF473Z50
	C912	ELECTR. CAPACITOR	CEASR33M50
	C913	CERAMIC CAPACITOR	CKCYF473Z50
	C1001	ELECTR. CAPACITOR	CEAS471M50
	C1004, 1005	ELECTR. CAPACITOR	CEAS330M35
	C1006	CERAMIC CAPACITOR	CKCYF103Z50
	C1007	ELECTR. CAPACITOR	CEAS222M16
	C1009	CERAMIC CAPACITOR	CKCYF103Z50
	C1010	ELECTR. CAPACITOR	CEAS102M10
	C1011	ELECTR. CAPACITOR	CEAS332M25
	C1012	CERAMIC CAPACITOR	CKCYF103Z50
	C1013	ELECTR. CAPACITOR	CEAS471M16
	C1014	CERAMIC CAPACITOR	CKCYF473Z50
	C1015	ELECTR. CAPACITOR	CEAS331M16
	C1016	ELECTR. CAPACITOR	CEAS100M50
	C1017	CERAMIC CAPACITOR	CKCYF103Z50
	C1018	ELECTR. CAPACITOR	CEAS100M50
	C1019	CERAMIC CAPACITOR	CKCYF103Z50
	C1020-1024	CERAMIC CAPACITOR	CKCYF473Z50
△	C1201	CAPACITOR (CERAMIC)	RCG-009
	C1601, 1602	ELECTR. CAPACITOR	CEASR22M50
	C1603, 1604	ELECTR. CAPACITOR	CEAS101M16
	C1605	ELECTR. CAPACITOR	CEAS331M16
RESISTORS			
	R101-124	CARBONFILM RESISTOR	RD1/6PM□□□J
	R127-144	CARBONFILM RESISTOR	RD1/6PM□□□J
	R150-153	CARBONFILM RESISTOR	RD1/6PM□□□J
	R201-209	CARBONFILM RESISTOR	RD1/6PM□□□J
	R214	CARBONFILM RESISTOR	RD1/6PM□□□J
	R241-244	CARBONFILM RESISTOR	RD1/6PM□□□J
	R246-249	CARBONFILM RESISTOR	RD1/6PM□□□J
	R301-333	CARBONFILM RESISTOR	RD1/6PM□□□J
	R340, 341	CARBONFILM RESISTOR	RD1/6PM□□□J
	R351, 352	CARBONFILM RESISTOR	RD1/6PM□□□J
	R357-382	CARBONFILM RESISTOR	RD1/6PM□□□J
	R390, 391	CARBONFILM RESISTOR	RD1/6PM□□□J
	R401	CARBONFILM RESISTOR	RD1/2LF□□□J
	R402-407	CARBONFILM RESISTOR	RD1/6PM□□□J
	R409, 410	CARBONFILM RESISTOR	RD1/6PM□□□J
	R411, 412	CARBONFILM RESISTOR	RD1/2LF□□□J
	R413-416	CARBONFILM RESISTOR	RD1/6PM□□□J
	R424-426	CARBONFILM RESISTOR	RD1/6PM□□□J
	R451	CARBONFILM RESISTOR	RD1/2LF□□□J
	R452-457	CARBONFILM RESISTOR	RD1/6PM□□□J
	R459, 460	CARBONFILM RESISTOR	RD1/6PM□□□J
	R461, 462	CARBONFILM RESISTOR	RD1/2LF□□□J
	R463-466	CARBONFILM RESISTOR	RD1/6PM□□□J
	R474-476	CARBONFILM RESISTOR	RD1/6PM□□□J
	R501-510	CARBONFILM RESISTOR	RD1/6PM□□□J
	R512	CARBONFILM RESISTOR	RD1/6PM□□□J

Mark	No.	Symbol & Description	Part No.
	R519-529	CARBONFILM RESISTOR	RD1/6PM□□□J
	R703, 704	CARBONFILM RESISTOR	RD1/6PM□□□J
	R731-736	CARBONFILM RESISTOR	RD1/6PM□□□J
	R738, 739	CARBONFILM RESISTOR	RD1/6PM□□□J
	R741	CARBONFILM RESISTOR	RD1/6PM□□□J
	R747, 748	CARBONFILM RESISTOR	RD1/6PM□□□J
	R761-764	CARBONFILM RESISTOR	RD1/6PM□□□J
	R801	CARBONFILM RESISTOR	RD1/6PM□□□J
	R802	METAL OXIDE RESISTOR	RS2LMF□□□J
	R803-805	CARBONFILM RESISTOR	RD1/6PM□□□J
	R807-811	CARBONFILM RESISTOR	RD1/6PM□□□J
	R812	CARBONFILM RESISTOR	RD1/2LF□□□J
	R814-818	CARBONFILM RESISTOR	RD1/6PM□□□J
	R851	CARBONFILM RESISTOR	RD1/6PM□□□J
	R852	METAL OXIDE RESISTOR	RS2LMF□□□J
	R853-861	CARBONFILM RESISTOR	RD1/6PM□□□J
	R862	CARBONFILM RESISTOR	RD1/2LF□□□J
	R864-868	CARBONFILM RESISTOR	RD1/6PM□□□J
	R901-909	CARBONFILM RESISTOR	RD1/6PM□□□J
	R910, 911	RESISTOR ARRAY	RA4T□□□J
	R913-922	CARBONFILM RESISTOR	RD1/6PM□□□J
	R923	RESISTOR ARRAY	RA8T□□□J
	R924	CARBONFILM RESISTOR	RD1/6PM□□□J
	R925	RESISTOR ARRAY	RA4T□□□J
	R926-930	CARBONFILM RESISTOR	RD1/6PM□□□J
	R931	RESISTOR ARRAY	RA10T□□□J
	R932	CARBONFILM RESISTOR	RD1/6PM□□□J
	R934, 935	CARBONFILM RESISTOR	RD1/6PM□□□J
	R937, 938	CARBONFILM RESISTOR	RD1/6PM□□□J
	R940-947	CARBONFILM RESISTOR	RD1/6PM□□□J
	R956, 957	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1001	CARBONFILM RESISTOR	RD1/2LF□□□J
	R1003	CARBONFILM RESISTOR	RD1/2LF□□□J
	R1004, 1005	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1007-1017	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1019	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1020	FUSIBLE RESISTOR	RFA1/4L4R7J
	R1601-1610	CARBONFILM RESISTOR	RD1/6PM□□□J
	VR101-104	VR	VRTB6VS223
	VR301, 302	VR	VRTB6VS223
	VR351, 352	VR	VRTB6VS223
	VR403	VARIABLE RESISTOR	RCP-031
	VR453	VARIABLE RESISTOR	RCP-031
	VR801		VRTG6VS223
	VR802	VR	VRTS6VS103
	VR851		VRTG6VS223

OTHERS

CN701, 702 JUMPER CONNECTOR 3-P
JA701
JA901 JACK
JA902, 903 JACK
X901 CERAMIC RESONATOR

KPC3
RKB1003
RKN1014
RKN1004
VSS1014

Mark	No.	Symbol & Description	Part No.
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DISPLAY UNIT

SEMICONDUCTORS

Q1501 DTA114TS
Q1503, 1504 DTA114TS
Q1505, 1506 TRANSISTOR DTA124ES
Q1507, 1508 DTA114TS
D1501-1513 DIODE ISS254

SWITCHES

S1501-1509 RSG1009
S1510, 1511 SWITCH RSH1014
S1512, 1513 RSH1024

RESISTORS

R1501-1512 CARBONFILM RESISTOR RD1/6PM□□□J
VR1501 RCV1057
VR1502 RCS1014

OTHERS

CN905 BTMK09S-1S
CN906 BTMK12S-1S
V1501 RAW1044

7. ADJUSTMENTS

7.1 MECHANICAL ADJUSTMENT

1. Tape Speed Adjustment and Check						
No.	Deck	Mode	Test tape	Adjusting points	Specifications/Ratings (playback frequency)	Remarks
1	I	Normal speed PLAY	STD-301 (3 kHz)	After playing back for 1 minute, ground TP16-2.		
2		Double speed PLAY		check	6000 Hz $\pm$ 600 Hz	
3		Normal speed PLAY		After checking, disconnect TP16-2 from ground.		
4	After playing back for 1 minute, ground TP16-1.					
5	II			VR802	Within $\pm$ 10Hz of step 2 (deck I) check value.	
6				After checking, disconnect TP16-1 from ground.		
7	Normal speed PLAY			VR801	3000 Hz $\pm$ 5 Hz	
8		I		VR851	Within $\pm$ 5 Hz of step 7 (deck II) adjustment value.	

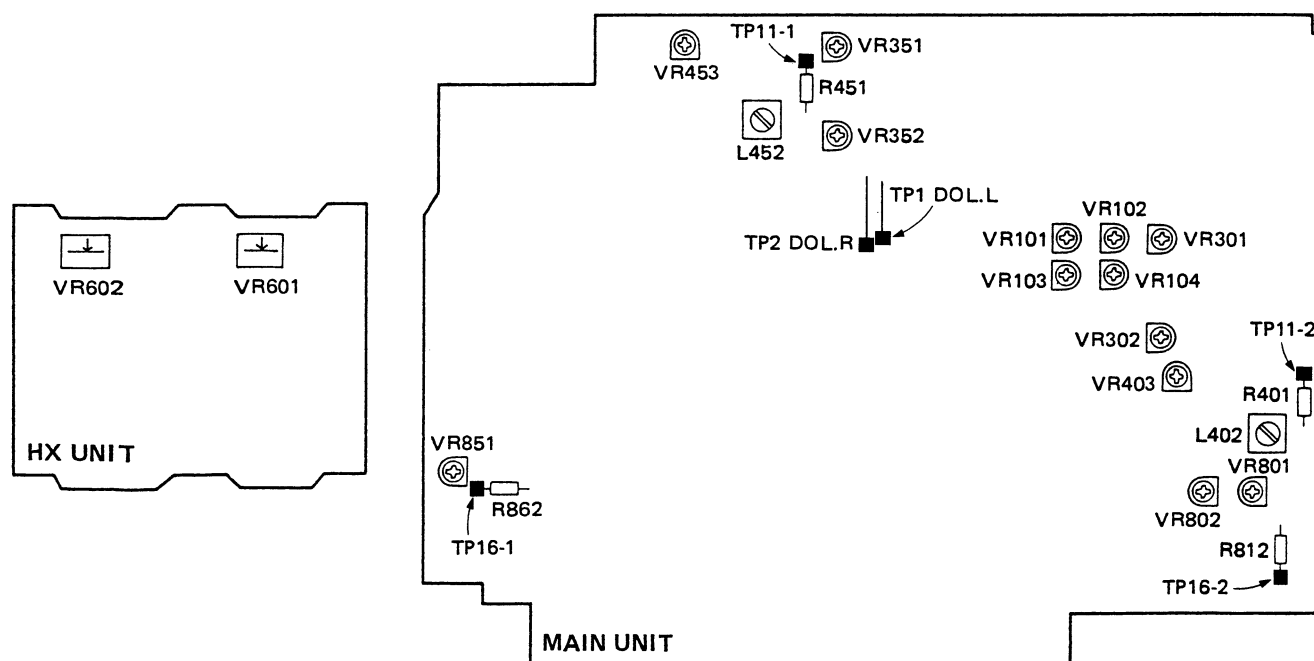


Fig. 7-1 Adjusting points

7.2 ELECTRICAL ADJUSTMENTS

Adjustment Conditions

1. The mechanical adjustments must be completed first.
 2. The head must be cleaned and demagnetized.
 3. Turn power on allow the deck to warm up for at least a few minutes before commencing any electrical adjustments.
 4. The reference signal is $0\text{dBv}=1\text{Vrms}$.
 5. Connect a $50\text{ k}\Omega$ (or between $47\text{ k}\Omega$ to $52\text{ k}\Omega$) load resistance to the OUTPUT terminals.
 6. Unless otherwise specified, the switches listed below are left in the positions indicated.
- DOLBY NR : OFF
TAPE SELECTOR : NORM

Test Tapes

STD-331B : Playback adjustments
(See Fig. 7-2)

STD-630 : NORMAL blank tape

STD-620 : CrO₂ blank tape

STD-610 : METAL blank tape

List of Adjustments

Playback sections

1. Head azimuth adjustment.
2. Playback level adjustment.

Recording sections

1. Bias oscillator adjustment.
2. Erase current adjustment.
3. Recording bias adjustment.
4. Recording level adjustment.
5. Level meter check.

NOTE: This unit has an automatic tape selection feature.

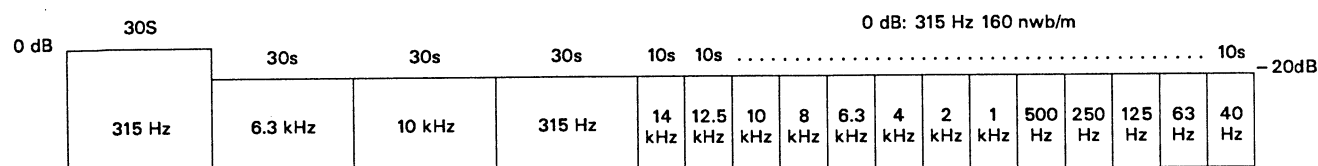


Fig. 7-2 Constants of the test tape STD-331B

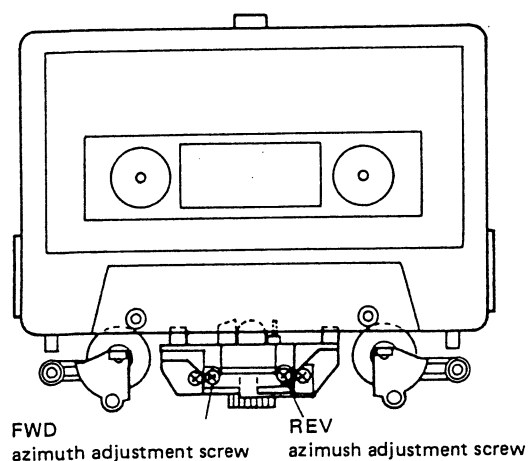


Fig. 7-3 Head azimuth adjustment

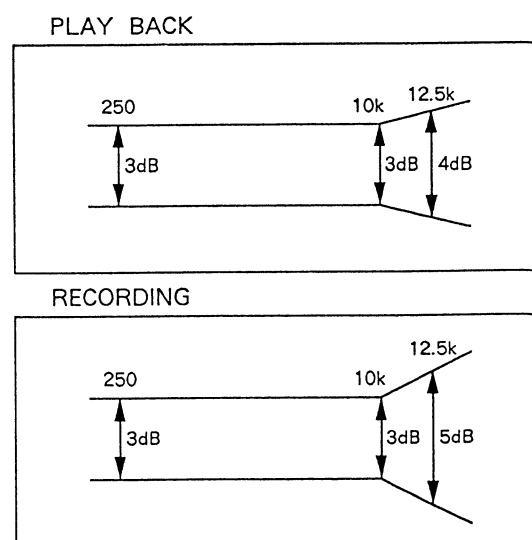


Fig. 7-4 Frequency response zone

PLAYBACK SECTION

1. Head Azimuth Adjustment

- Turn VR101, VR102 (Deck I) or VR103, VR104 (Deck II) to mechanical center positions.

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 10 kHz/−20 dB section of STD-331B test tape.	Head azimuth adjustment screw. (See Fig. 7-3)	LINE OUT	Maximum playback signal level.	
2.	STOP	Lock the screw with screw lock after completing adjustment.				

2. Playback level Adjustment

- This adjustment determines the DOLBY NR level, and must be performed with great care.

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 315 Hz/0 dB section of the STD-331B test tape.	Deck I VR103 (Lch) VR104 (Rch)	TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	−10.7 dBv	
			Deck II VR101 (Lch) VR102 (Rch)			

RECORDING SECTION

1. Bias Oscillator Adjustment

- Adjust the bias oscillator with checks set to recording mode simultaneously. ← (Double R/P only)

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	REC	Load the STD-610 test tape with no input signal.	Deck I L 452	TP. 11-1	105 kHz ± 0.3 kHz	
			Deck II L 402	TP. 11-2		

2. Erase Current Adjustment

- Adjust the bias oscillator with decks I and II set to recording mode independently. ← (Double R/P only)

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	REC	Load the STD-610 test tape with no input signal.	Deck I VR453	TP. 11-1	165 mV AC	
			Deck II VR403	TP. 11-2		

3. Recording Bias Adjustment

- Adjust the bias oscillator with decks I and II set to recording mode independently. ← (Double R/P only)
- After the adjustment, caution should be exercised so as not to become under bias by checking the distortion rate.

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	STOP	Set the TAPE SELECTOR switch to the NORM position.				
2.	REC	Record the 315 Hz and 6.3 kHz signals at −20 dBv input level and playback.	Deck I VR601 (Lch) VR602 (Rch)	LINE OUT	Repeatedly record, playback and adjust so that the playback level of 6.3 kHz signal becomes +1.0 dB ± 0.5 dB when compared with the 315 Hz signal.	
			Deck II VR601 (Lch) VR602 (Rch)			

4. Recording Level Adjustment

• Adjust the bias oscillator with decks I and II set to recording mode independently. ← (Double R/P only)

• Adjust the bias oscillator with decks I and II set to recording mode independently. (DOLBY NR only)

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	STOP	Set the TAPE SELECTOR switch to the NORM position.					
2.	REC PAUSE	Apply a 315 Hz/0 dBv signal to the line input terminals, load the STD-630 test tape.	Rec Level control volume		TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	- 11.2 dBv	
3.	STOP	Set the DOLBY NR switch to the ON position. (DOLBY B)					
4.	REC/ PLAY	Record the above signal onto the STD-630 test tape, and playback.	Deck I	VR351 (Lch) VR352 (Rch)	TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	Repeatedly record, playback and adjust so that the playback signal level becomes - 11.2 dB.	
			Deck II	VR301 (Lch) VR302 (Rch)			
5.	STOP	Set the TAPE SELECTOR switch to the CrO ₂ position.					
6.	REC/ PLAY	Record the above signal onto the STD-620 test tape, and playback.	Check		TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	- 11.2 dBv ± 1.5 dB	
7.	STOP	Set the TAPE SELECTOR switch to the METAL position.					
8.	REC/ PLAY	Record the above signal onto the STD-610 test tape, and playback.	Check		TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	- 11.2 dBv ± 1.5 dB	

5. Level Meter Check

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	REC PAUSE	Apply a 315 Hz/ - 10 dBv (316 mV) signal to the Line Input terminals.	Rec Level control volume	TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	Check that the level meters "0 dB" light up within - 11.2 dBv ± 2 dB of the signal output level.	

7. RÉGLAGE

7.1 RÉGLAGES MECANIQUES

1. Réglage et vérification de la vitesse de defilement de la bande						
No.	Platine	Mode	Bande test	Points de réglage	Spécifications/valeurs (fréquence de lecture)	Remarques
1	I	Lecture à vitesse normale	STD-301 (3 kHz)	Après une lecture pendant 1 minute, mettre TP16-2 à la terre.		
2		Lecture à vitesse double		Vérifier	6000 Hz ± 600 Hz	
3		Lecture à vitesse normale		Après vérification, déconnecter TP16-2 de la terre.		
4	II	Lecture à vitesse double		Après une lecture pendant 1 minute, mettre TP16-1 à la terre.		
5		Lecture à vitesse double		VR802	Dans la limite de ± 10 Hz de la valeur de vérification de 1' étape 2 (platine I)	
6		Lecture à vitesse normale		Après vérification, déconnecter TP16-1 de la terre.		
7				VR801	3000 Hz ± 5 Hz	
8	I			VR851	Dans la limite de ± 5 Hz de la valeur de réglage de 1'étape 7 (platine II).	

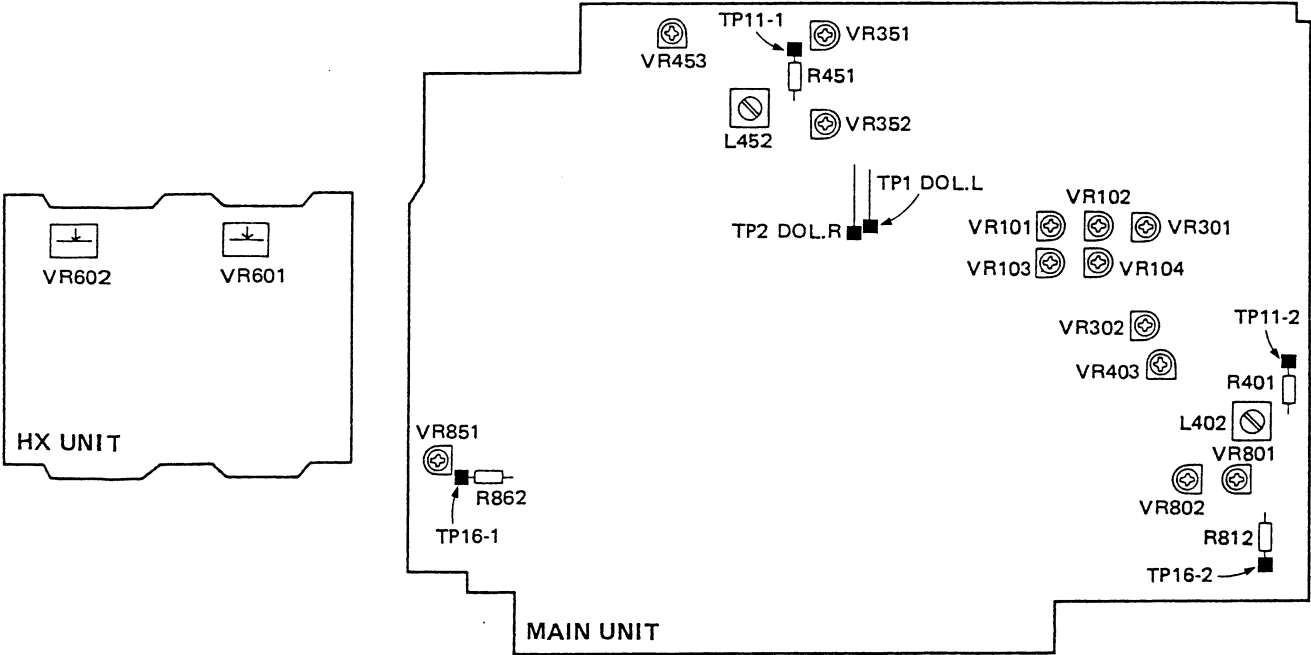


Fig. 7-1 Points de réglage

7.2 REGLAGES ELECTRIQUES

Conditions de réglage

1. Les réglages mécaniques doivent tout d'abord être terminés.
2. Les têtes doivent être nettoyées et démagnétisées.
3. Mettre la platine sous tension et la laisser chauffer pendant au moins quelques minutes avant de commencer les réglages électriques.
4. Le signal de référence est de $\text{dBV}=1 \text{ Vrms}$.
5. Connecter une résistance de charge de $50 \text{ k}\Omega$ (tolérance 47k à $52 \text{ k}\Omega$) aux bornes de sortie (OUTPUT).
6. Sauf indication contraire, les commutateurs ci-dessous doivent être laissés sur les positions indiquées.
DOLBY NR : OFF
Sélecteur de bande : NORM
(TAPE SELECTOR)

Bandes d'essai

- STD-331B : Réglages de la lecture
(Voir fig. 7-2)
- STD-630 : Bande vierge de type normal
- STD-620 : Bande vierge de type chrome
- STD-610 : Bande vierge de type métal

Liste des réglages

Sections de lecture

1. Réglage de l'azimut de la tête.
2. Réglage du niveau de lecture.

Sections d'enregistrement

1. Réglage de l'oscillateur de polarisation.
2. Réglage du courant d'effacement.
3. Réglage de la polarisation d'enregistrement.
4. Réglage du niveau d'enregistrement.
5. Vérification de l'indicateur de niveau.

REMARQUE:

Cette unité est dotée d'une sélection automatique de bande.

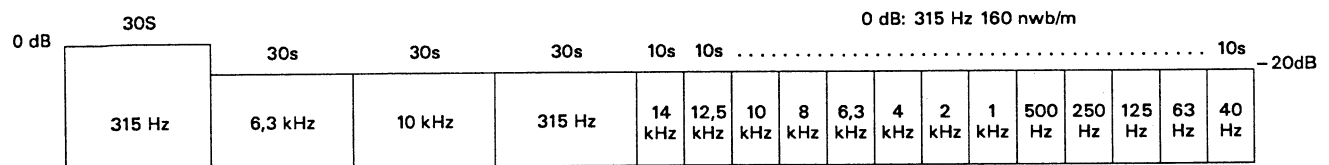


Fig. 7-2 Constantes de la bande d'essai STD-331B

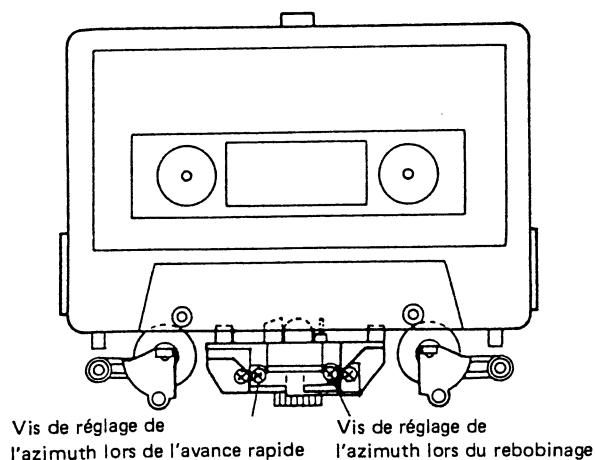
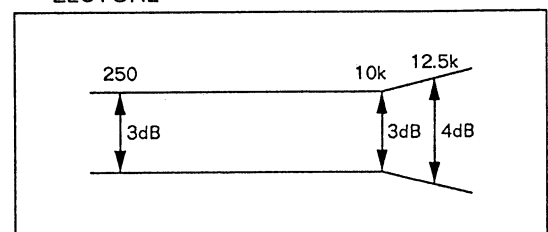


Fig. 7-3 Réglage de l'azimut de la tête

LECTURE



ENREGISTREMENT

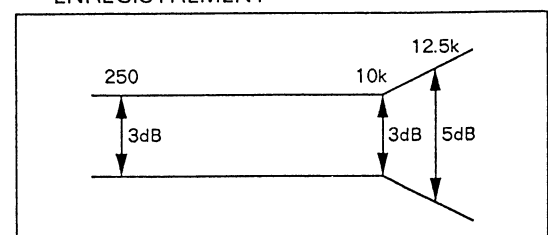


Fig. 7-4 Zone de réponse en fréquence

SECTION DE LECTURE

1. Réglage de l'azimut de la tête

- Tourner VR101, VR102 (Platine I) ou VR103, VR104 (Platine II) sur leur position centrale mécanique.

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage	Points de mesure	Valeur de réglage	Remarques
1.	PLAY	Reproduire la section 10 kHz/−20 dB de la bande d'essai STD-331B.	Vis de réglage de l'azimut de la tête. (Voir fig. 7-3)	Sortie de ligne (LINE OUT)	Niveau du signal de reproduction maximum.	
2.	STOP	Verrouiller la vis avec le verrouillage de vis après avoir terminé le réglage.				

2. Réglage du niveau de lecture

- Ce réglage détermine le niveau DOLBY NR et il doit être effectué très soigneusement.

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage		Points de mesure	Valeur de réglage	Remarques
1.	PLAY	Reproduire la section 315 Hz/0 dB de la bande d'essai STD-331B.	Platine I	VR103 (can. G) VR104 (can. D)	TP. 1 DOL.L (can. G) TP. 2 DOL.R (can. D)	−10,7 dBv	
			Platine II	VR101 (can. G) VR102 (can. D)			

SECTION D'ENREGISTREMENT

1. Réglage de l'oscillateur de polarisation

- Régler l'oscillateur de polarisation, les platines étant réglées simultanément dans le mode d'enregistrement. ← (Enr/lec double seulement)

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage		Points de mesure	Valeur de réglage	Remarques
1.	REC	Charger la bande d'essai STD-610 et n'introduire aucun signal.	Platine I	L 452	TP. 11-1	105 kHz ± 0,3 kHz	
			Platine II	L 402	TP. 11-1		

2. Réglage du courant d'effacement

- Régler l'oscillateur de polarisation, les platines I et II étant réglées indépendamment dans le mode d'enregistrement. ← (Enr/lec double seulement)

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage		Points de mesure	Valeur de réglage	Remarques
1.	REC	Charger la bande d'essai STD-610 et n'introduire aucun signal.	Platine I	VR453	TP. 11-1	165 mV AC	
			Platine II	VR403	TP. 11-1		

3. Réglage de la polarisation d'enregistrement

- Régler l'oscillateur de polarisation, les platines I et II étant réglées indépendamment dans le mode d'enregistrement. ← (Enr/lec double seulement)
- Après le réglage, des précautions doivent être prises pour éviter une sous-polarisation en vérifiant le taux de distorsion.

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage		Points de mesure	Valeur de réglage	Remarques
1.	STOP	Régler le sélecteur de bande (TAPE SELECTOR) sur la position NORM.					
2.	REC	Enregistrer les signaux 315 Hz et 6,3 kHz à un niveau d'entrée de − 20 dBv et les reproduire.	Platine I	VR601 (can. G) VR602 (can. D)	Sortie de ligne (LINE OUT)	Enregistrer, reproduire et régler de manière répétée de sorte que le niveau de lecture du signal 6,3 kHz devienne + 1,0 dB ± 0,5 dB lorsqu'il est comparé avec le signal 315 Hz.	
			Platine II	VR601 (can. G) VR602 (can. D)			

4. Réglage du niveau d'enregistrement

• Régler l'oscillateur de polarisation, les platines I et II étant réglées indépendamment dans le mode d'enregistrement. ← (Enr/lec double seulement)

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage	Points de mesure	Valeur de réglage	Remarques
1.	STOP	Régler le sélecteur de bande (TAPE SELECTOR) sur la position NORM.				
2.	REC PAUSE	Appliquer un signal de 315 Hz/0 dBv aux bornes d'entrée de ligne, charger la bande d'essai STD-630.	Volume de la commande de niveau d'enregistrement.	TP. 1 DOL.L (can. G) TP. 2 DOL.R (can. D)	- 11,2 dBv	
3.	STOP	Régler le commutateur DOLBY NR sur la position ON. (DOLBY B)				
4.	REC/ PLAY	Enregistrer le signal cidessus sur la bande d'essai STD-630 et le reproduire.	Platine I VR351 (can. G) VR352 (can. D) Platine II VR301 (can. G) VR302 (can. D)	TP. 1 DOL.L (can. G) TP. 2 DOL.R (can. D)	Enregistrer, reproduire et régler de manière répétée de sorte que le niveau du signal devienne - 11,2 dB.	
5.	STOP	Régler le sélecteur de bande (TAPE SELECTOR) sur la position CrO ₂ .				
6.	REC/ PLAY	Enregistrer le signal cidessus sur la bande d'essai STD-620 et le reproduire.	Vérifier	TP. 1 DOL.L (can. G) TP. 2 DOL.R (can. D)	- 11,2 dBv ± 1,5 dB	
7.	STOP	Régler le sélecteur de bande (TAPE SELECTOR) sur la position METAL.				
8.	REC/ PLAY	Enregistrer le signal cidessus sur la bande d'essai STD-610 et le reproduire.	Vérifier	TP. 1 DOL.L (can. G) TP. 2 DOL.R (can. D)	- 11,2 dBv ± 1,5 dB	

5. Vérification de l'indicateur de niveau

No.	Mode	Signal d'entrée et bande d'essai	Points de réglage	Points de mesure	Valeur de réglage	Remarques
1.	REC PAUSE	Appliquer un signal de 315 Hz/ - 10 dBv (316 mV) aux bornes d'entrée de ligne.	Volume de la commande de niveau d'enregistrement	TP. 1 DOL.L (can. G) TP. 2 DOL.R (can. D)	Vérifier que les indicateurs de niveau "0 dB" s'allument dans la limite de - 11,2 dBv ± 2 dB du niveau de sortie du signal.	

7. AJUSTE

7.1 AJUSTE MECANICO

1. Ajuste y verificación de la velocidad de cinta							
No.	Platina	Modo	Cinta de prueba	Puntos de ajuste	Especificaciones/valores nominales (frecuencia de reproducción)	Comentarios	
1	I	PLAY (velocidad normal)	STD-301 (3 kHz)	Después de reproducir por 1 minuto, conectar TP16-2 a tierra.			
2		PLAY (velocidad doble)		Verificar	6000 Hz ± 600 Hz		
3		PLAY (velocidad normal)		Después de verificar, desconectar TP16-2 de tierra.			
4	Después de reproducir por 1 minuto, conectar TP16-1 a tierra.						
5	II	PLAY (velocidad doble)		VR802	Dentro de un margen de ± 10 Hz del valor de verificación del paso 2 (platina I).		
6		PLAY (velocidad normal)		Después de verificar, desconectar TP16-1 de tierra.			
7				VR801	3000 Hz ± 5 Hz		
8				I	VR851		Dentro de un margen de ± 5 Hz del valor de verificación del paso 7 (platina II).

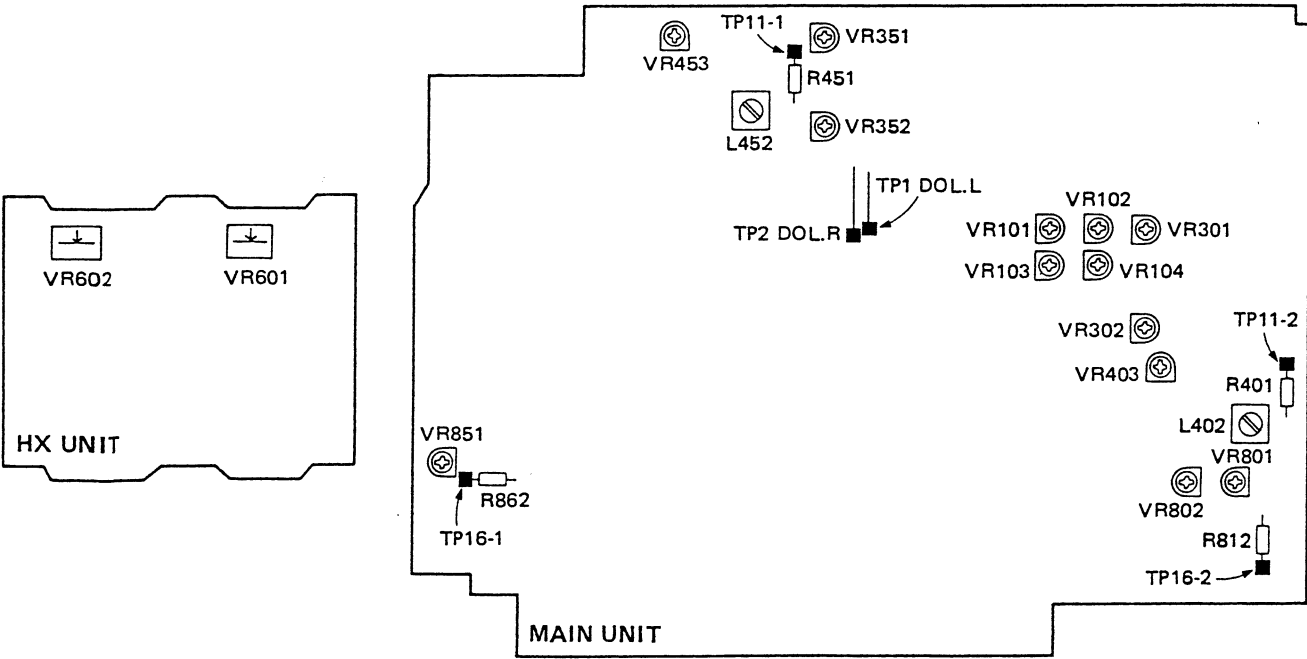


Figura. 7-1 Puntos de ajuste

7.2 AJUSTES ELÉCTRICOS

Condiciones de ajuste

1. Los ajustes mecánicos deben haberse completado primero.
2. La cabeza debe estar limpia y desmagnetizada.
3. Encienda la alimentación para permitir que la platina se caliente durante unos pocos minutos por lo menos antes de realizar cualquier ajuste eléctrico.
4. La señal de referencia es de 0 dBv=1 Vrms.
5. Conecte una resistencia de 50 k Ω (o entre 47k y 52 k Ω) en los terminales OUTPUT.
6. A menos que se especifique lo contrario, los conmutadores indicados más abajo deben dejarse en las posiciones indicadas.

DOLBY NR : OFF
TAPE SELECTOR : NORM

Cintas de prueba

STD-331B : Ajustes de reproducción
(Consulte la figura 7-2)
STD-630 : Cinta virgen NORMAL
STD-620 : Cinta virgen de CrO₂
STD-610 : Cinta virgen de METAL

Lista de ajustes

Secciones de reproducción

1. Ajuste de azimuth de la cabeza
2. Ajuste del nivel de reproducción

Secciones de grabación

1. Ajuste del oscilador de polarización
2. Ajuste de la corriente de borrado
3. Ajuste de la polarización de grabación
4. Ajuste del nivel de grabación
5. Verificación del medidor de nivel

NOTA:

Esta unidad posee una función de selección automática de cinta.

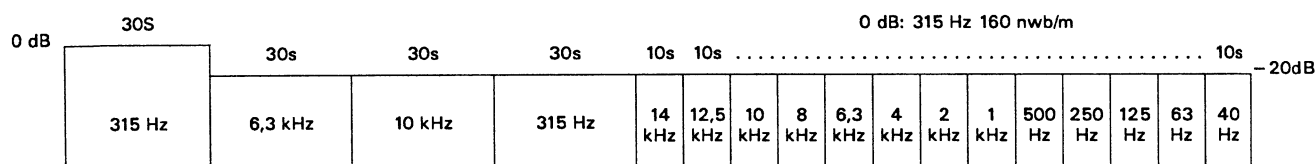


Figura 7-2 Constantes de la cinta de prueba STD-331B

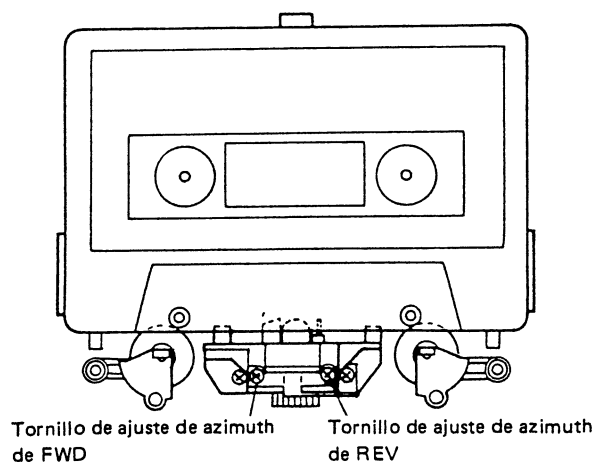
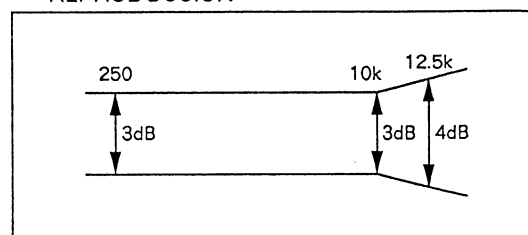


Figura 7-3 Ajuste de azimuth de la cabeza

REPRODUCCIÓN



GRABACIÓN

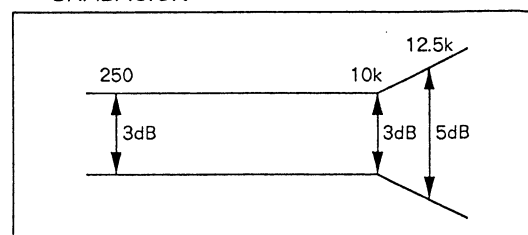


Figura 7-4 Zona de respuesta de frecuencia

SECCIÓN DE REPRODUCCIÓN

1. Ajuste del azimut de la cabeza

- Poner VR101, VR102 (platina I) o VR103, VR104 (platina II) en las posiciones del centro mecánico.

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Comentarios
1.	PLAY	Reproduzca la sección de 10 kHz/−20 dB de la cinta de prueba STD-331B.	Tornillo de ajuste del azimut de la cabeza. (Vea la figura 7-3)	LINE OUT	Nivel máximo de la señal de reproducción.	
2.	STOP	Bloquee el tornillo con su cierre una vez finalizado el ajuste.				

2. Ajuste del nivel de reproducción

- Este ajuste determina el nivel DOLBY NR y debe realizarse con mucho cuidado.

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Comentarios
1.	PLAY	Produce la parte de 315 Hz/0 dB de la cinta de prueba STD-331B.	Platina I	VR103 (Lch) VR104 (Rch)	TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	− 10,7 dBv	
			Platina II	VR101 (Lch) VR102 (Rch)			

SECCION DE GRABACION

1. Ajuste del oscilador de polarización

- Ajuste el oscilador de polarización con los platinas puestas simultáneamente en el modo de grabación. (Doble G/R sólo)

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Comentarios
1.	REC	Introduzca la cinta de prueba STD-610 sin señal de entrada.	Platina I	L 452	TP. 11-1	105 kHz ± 0,3 kHz	
			Platina II	L 402	TP. 11-1		

2. Ajuste de la corriente de borrado

- Ajuste el oscilador de polarización con las platinas I y II puestas independientemente en el modo de grabación. ← (Doble G/R sólo)

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Comentarios
1.	REC	Introduzca la cinta de prueba STD-610 sin señal de entrada.	Platina I	VR453	TP. 11-1	165 mV AC	
			Platina II	VR403	TP. 11-1		

3. Ajuste de polarización de grabación

- Ajuste el oscilador de polarización estando las platinas I y II ajustadas independientemente para el modo de grabación. ← (Doble G/R sólo)
- Una vez finalizado el ajuste, compruebe el porcentaje de distorsión para no obtener subpolarización.

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste		Punto de medición	Valor de ajuste	Comentarios
1.	STOP	Ponga el conmutador TAPE SELECTOR en la posición NORM.					
2.	REC	Grabe la señal de 315 Hz y 6,3 kHz a un nivel de entrada de - 20 dBv y reproduzca.	Platina I	VR601 (Lch) VR602 (Rch)	LINE OUT	Grabe, reproduzca y ajuste repetidamente para que el nivel de la señal de reproducción de 6,3 kHz sea de + 1,0 dB ± 0,5 dB cuando se compare con la señal de 315 Hz.	
			Platina II	VR601 (Lch) VR602 (Rch)			

4. Ajuste del nivel de grabación

• Ajuste el oscilador de polarización con las platinas I y II puestas independientemente en el modo de grabación. ← (Doble G/R sólo)

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Comentarios
1.	STOP	Ponga el conmutador TAPE SELECTOR en la posición NORM.				
2.	REC PAUSE	Aplique una señal de 315 Hz/0 dBv a los terminales de entrada de línea e introduzca la cinta de prueba STD-630.	Control de nivel de grabación.	TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	- 11,2 dBv	
3.	STOP	Ponga el conmutador DOLBY NR en la posición ON. (DOLBY B)				
4.	REC/ PLAY	Grabe la señal de arriba en la cinta de prueba STD-630 y reproduzca.	Platina I VR351 (Lch) VR352 (Rch) Platina II VR301 (Lch) VR302 (Rch)	TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	Grabe, reproduzca y ajuste repetidamente para que el nivel de la señal de reproducción sea de - 11,2 dB.	
5.	STOP	Ponga el conmutador TAPE SELECTOR en la posición CrO2.				
6.	REC/ PLAY	Grabe la señal de arriba en la cinta de prueba STD-620 y reproduzca.	Verifique	TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	- 11,2 dBv ± 1,5 dB	
7.	STOP	Ponga el conmutador TAPE SELECTOR en la posición METAL.				
8.	REC/ PLAY	Grabe la señal de arriba en la cinta de prueba STD-610 y reproduzca.	Verifique	TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	- 11,2 dBv ± 1,5 dB	

5. Verificación del medidor de nivel

N.º	Modo	Señal de entrada y cinta de prueba	Punto de ajuste	Punto de medición	Valor de ajuste	Comentarios
1.	REC PAUSE	Aplique una señal de 315 Hz/- 10 dBv (316 mV) a los terminales de entrada de línea.	Control de nivel de grabación	TP. 1 DOL.L (Lch) TP. 2 DOL.R (Rch)	Verifique si se encienden los medidores de nivel "0 dB" cuando el nivel de salida de la señal sea - 11,2 dBv ± 2 dB.	

8. FOR CT-W830R/HEM, HB AND CT-W840R/SD TYPES

8.1 CONTRAST OF MISCELLANEOUS PARTS

NOTES :

- Parts without part number cannot be supplied.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

The CT-W830R/HEM, HB and CT-W840R/SD types are the same as the CT-W830R/KUC type with the exception of the following sections.

Mark	Symbol & Description	Part No.				Remarks
		CT-W830R/ KUC type	CT-W830R/ HEM type	CT-W830R/ HB type	CT-W840R/ SD type	
	Main unit	Non supply	Non supply	Non supply	Non supply	
	Display unit	Non supply	Non supply	Non supply	Non supply	
Δ	Strain relief	CM-22C	CM-22B	CM-22B	CM-22B	
Δ	AC power cord	PDG1002	PDG1003	PDG1004	PDG1013	
Δ	Fuse (1.5A/125V, FU1001, 1002)	REK1001	.....	.....	.....	
Δ	Fuse (T1.6A/250V, FU1001, 1002)	.....	REK-102	REK-102	REK-102	
Δ	Power transformer (AC120V)	RTT1127	.....	.....	.....	
Δ	Power transformer (AC220/240V)	.....	RTT1128	RTT1128	.....	
Δ	Power transformer (AC110/120-127/220/240V)	.....	.....	.....	RTT1129	
	Line voltage selector	.....	.....	.....	PSB1002	
Δ	FL filter	RAH1596	RAH1597	RAH1597	RAH1672	
	FL lens	RAH1594	RAH1594	RAH1594	RAH1567	
	Front panel assembly	RXX1296	RXX1298	RXX1298	RXX1299	
	Packing case	RHG1180	RHG1180	RHG1180	RHG1154	
	Operating instructions (French/German/Italian/Dutch/Spanish/Portuguese/Swedish)	.....	RRD1069	.....	.....	
	Connection cord (Mini)	PDE-319	.....	.....	.....	
	Remote control unit	.....	.....	.....	RPX1008	
	Case (C)	.....	.....	.....	VNK-634	Battery cover

MAIN UNIT

- The main unit for CT-W830R/HEM type is the same as the main unit for CT-W830R/KUC type with the exception of the following section.
- The main units of CT-W830R/HB and CT-W840R/SD types are the same as that of CT-W830R/HEM.

Mark	Symbol & Description	Part No.		Remarks
		CT-W830R/ KUC type	CT-W830R/ HEM type	
	D910-D912	1SS254	.....	
	C910	CEASR33M50	.....	
	JA902, JA903 Remote control jack	RKN1004	.....	

DISPLAY UNIT

- The display units of CT-W830R/HEM and HB types are the same as that of CT-W830R/KUC.
- The display unit of CT-W840R/SD type is the same as that of CT-W830R/KUC with the exception of the following components.

Mark	Symbol & Description	Part No.		Remarks
		CT-W830R/ KUC type	CT-W840R/ SD type	
	IC1501 Remote control reception	.....	GP1U52X	

9. SPECIFICATIONS

System	4-track, 2-channel stereo
Heads	"Hard Permalloy" recording/playback head x 2 "Ferrite" Erasing head x 2
Motor	DC servo capstan motor x 2
Wow and Flutter	No more than 0.055% WRMS (JIS) No more than $\pm 0.16\%$ (DIN)
Fast Winding Time	Approx. 100 sec. (C-60 tape)
Frequency Response (-20 dB recording)	
Metal tape	18 Hz ~ 18,500 Hz
Chrome tape	18 Hz ~ 18,000 Hz
Normal tape	18 Hz ~ 17,000 Hz
S/N	
Dolby NR OFF	57 dB or more
Dolby B-type NR ON	10 dB improved at 5 kHz
Dolby C-type NR ON	19 dB improved at 5 kHz (third high frequency distortion 3%, acoustic equalizing)
Harmonic Distortion	0.7% (third frequency distortion at 1 kHz, metal tape)

Subfunctions

- I/II automatic reverse
- Double recording/playback reverse
- DOLBY HX PRO headroom extension
- Deck I/II independent DOLBY NR switch
- Relay playback
- Relay recording
- Simultaneous recording (parallel recording)
- Normal speed/Double speed synchro copying (Deck I → II)
- MS ± 15 Skip search
- Blank skip (during relay playback)
- CD-DECK SYNCHRO function
- Automatic tape selector
- Timer recording/playback start (automatically moves on to relay operation)
- Automatic recording mute
- Headphone jack
- FL peak level meter
- 2-mode electronic 4-digit tape counter (Deck I/II independent)

Input Terminals

LINE INPUT	RCA pin jack x 2 input sensitivity 63 mV input impedance 50 k Ω
LINE OUTPUT	RCA pin jack x 2 standard output level 316 mV output impedance 3 k Ω
HEADPHONE OUTPUT	stereo standard jack 0.25 mW load impedance 8 Ω

Power Supplies

Power Requirements

U.S., Canadian models	AC 120 Volts, 60 Hz
European model	a.c. 220 Volts ~, 50/60 Hz
U.K. model	a.c. 240 Volts ~, 50/60 Hz
Multi voltage model/U.S. military model	AC 110/120 ~ 127/220/240 V (switchable), 50/60 Hz

Power Consumption

U.S., Canadian models	32 W
European, U.K. model	32 W
Multi voltage model/U.S. military model	31 W

Dimensions	420(W) x 135(H) x 318.5(D) mm 16-9/16(W) x 5-3/16(H) x 12-1/2(D) inches
Weight	approx. 5.7 kg (12 lb 9 oz)

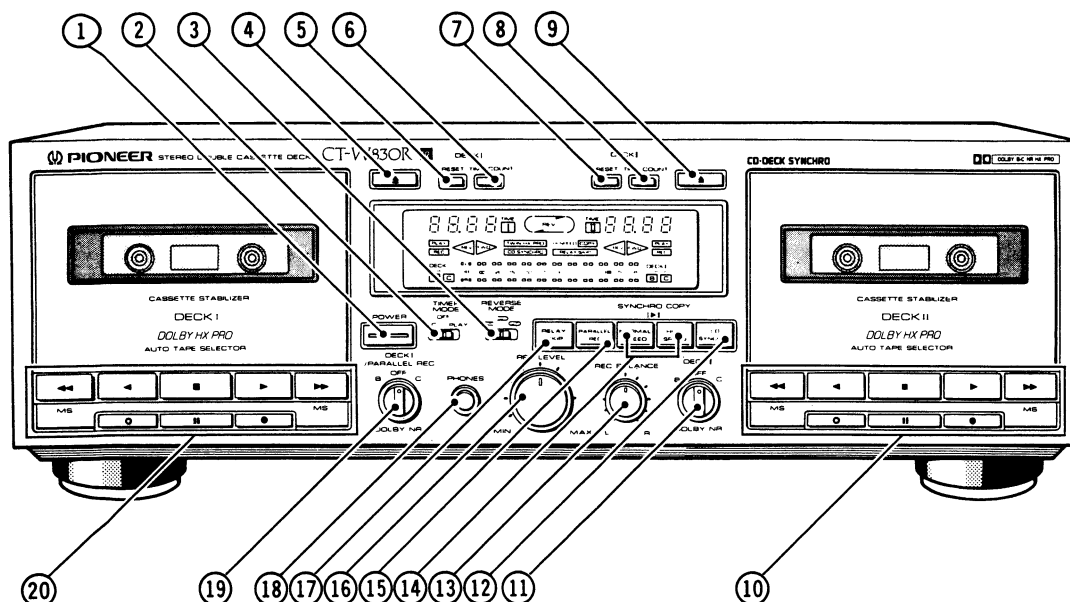
Accessories

Operating instructions	1
Connection cords (RCA pin plugs)	2
CD-DECK SYNCHRO cord	1
Remote control cord (U.S. and Canadian models)	1
Remote control unit (CT-W840R only)	1
Dry cell batteries (size AAA/IEC R03) (CT-W840R only)	2

NOTE:

Specifications and design are subject to modification for improvement without any notice.

10. PANEL FACILITIES



① **POWER switch (POWER)**

② **TIMER switch (TIMER MODE)**

OFF: Set to this position when the timer is not in use.

REC: Set to this position for timer recording.

PLAY: Set to this position for timer playback.

NOTE:

If you set this switch either to REC or PLAY, the deck will automatically start to record or playback.

③ **REVERSE MODE switch (REVERSE MODE)**

④ **DECK I EJECT button (▲)**

Press to open the cassette door of DECK I. Press the stop button (■) first to stop a tape running before opening the door.

NOTE:

If you turn off the deck while the tape is running, the cassette door may not open. In this case, turn on the deck to open the door.

⑤ **DECK I COUNTER RESET button (RESET)**

Press to return the counter of DECK I to 0000.

⑥ **DECK I COUNTER MODE switch (TIME/COUNT)**

This button switches the counter of DECK I between the tape counter and time counter.

⑦ **DECK II COUNTER RESET button (RESET)**

Press to return the counter of DECK II to 0000.

⑧ **DECK II COUNTER MODE switch (TIME/COUNT)**

Press to switch the counter of DECK II between tape counter and time counter.

⑨ **DECK II EJECT button (▲)**

Press to open the cassette door of DECK II. Press the stop button (■) first to stop a tape running before opening the door.

NOTE:

If you turn off the deck while the tape is running, the cassette door may not open. In this case, turn on the deck to open the door.

⑩ **DECK II operation buttons**

◀◀: Press to rewind a tape. If you press during playback, you can operate skip search, in which the number of the skipped tracks corresponds to the number of times you press the button.

◀: Press to play the back side of a cassette tape (opposite to the labeled side), which is called reverse playback.

■: Press to stop any operation, including simultaneous recording or copying.

▶: Press to play the front side of a cassette tape (labeled side), which is called forward playback.

▶▶: Press to fast forward a tape. Press to operate skip search during playback in which the number of the skipped tracks correspond to the number of times you press the button.

●: Press to recording standby. Press the Pause (||) or Play (▶, ◀) to resume recording. You cannot record if the erasure prevention tabs are broken.

||: Press to stop a tape temporarily during recording or playback. Press it again to resume the operation (you can also start the operation by pressing ▶ or ◀). You cannot use this button during fast forward or rewinding.

○: Press during recording, and the recording signals will be erased for about 4 sec. Then, recording standby.

⑪ DECK II DOLBY* NR switch (DOLBY NR)

This effects DECK II (except simultaneous recording and copying).

NOTE:

Use the same type of position, either B or C of the noise reduction, for playback as the one at recording.

Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen. "DOLBY", the double-D symbol  and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

⑫ CD SYNCHRO button

This button automatically operates a CD player while recording a CD.

⑬ RECORDING BALANCE CONTROL (REC BALANCE)**⑭ SYNCHRO COPY button (SYNCHRO COPY)**

- **NORMAL SPEED (normal speed copying)**
This setting enables you to copy from DECK I to II at normal speed.
- **HIGH SPEED (double speed copying)**
This setting enables you to copy from DECK I to II at double the normal copying speed.

⑮ PARALLEL REC button

Press to record with the DECKs I and II simultaneously.

⑯ RECORDING LEVEL CONTROL (REC LEVEL)**⑰ RELAY/SKIP button (RELAY/SKIP)**

Press to light the indicators, and you can operate relay playback or recording. During playback, if a blank section of the tape continues for about 15 sec., blank skip functions to fast-forward the tape to search the next recorded section for playback.

⑱ HEADPHONE jack (PHONES)**⑲ DECK I DOLBY* NR switch (DOLBY NR)**

This switch effects DECK I. During parallel recording, the switch effects both DECKs I and II.

NOTE:

Use the same type of position, either B or C of the noise reduction, for playback as the one at recording.

⑳ DECK I operation buttons

- ◀◀ : Press to rewind a tape. If you press during playback, you can operate skip search, in which the number of the skipped tracks corresponds to the number of times you press the button.
- ◀ : Press to play the back side of a cassette tape (opposite to the labeled side), which is called reverse playback.
- : Press to stop any operation, including simultaneous recording or copying.
- ▶ : Press to play the front side of a cassette tape (labeled side), which is called forward playback.
- ▶▶ : Press to fast forward a tape. Press to operate skip search during playback in which the number of the skipped tracks correspond to the number of times you press the button.
- : Press to stop recording temporarily. Press the PAUSE (||) or PLAY (▶, ◀) to resume recording. You cannot record if the erasure prevention tabs are broken.
- || : Press to stop a tape temporarily during recording or playback. Press it again to resume the operation (you can also start the operation by pressing ▶ or ◀). You cannot use this button during fast forward or rewinding.
- ▶ : Press during recording, and the recording signals will be erased for about 4 sec. Then, recording stops temporarily.

11. CONNECTIONS

- Make sure to read the instruction manuals of the stereo components to be connected to this deck.
- Do not turn on the stereo component until all connections have been completed.
- Insert plugs firmly. Improper connection may cause noise.

MPX FILTER switch

Set the MPX FILTER switch, located on the rear panel, to ON when recording an FM stereo broadcasting using the Dolby NR system. Set it to OFF at other times.

Explanation on the MPX FILTER

The FM stereo signals contain the 19-kHz pilot signal and 38-kHz sub-carrier. Depending on tuners, these may cause a malfunction of the Dolby noise reduction circuit, disabling to reproduce the high-frequency sound. Set this switch to ON to prevent a malfunction.

Set the switch to OFF when the Dolby noise reduction system is not in use or recording non-FM stereo broadcasting. The switch does not effect playback.

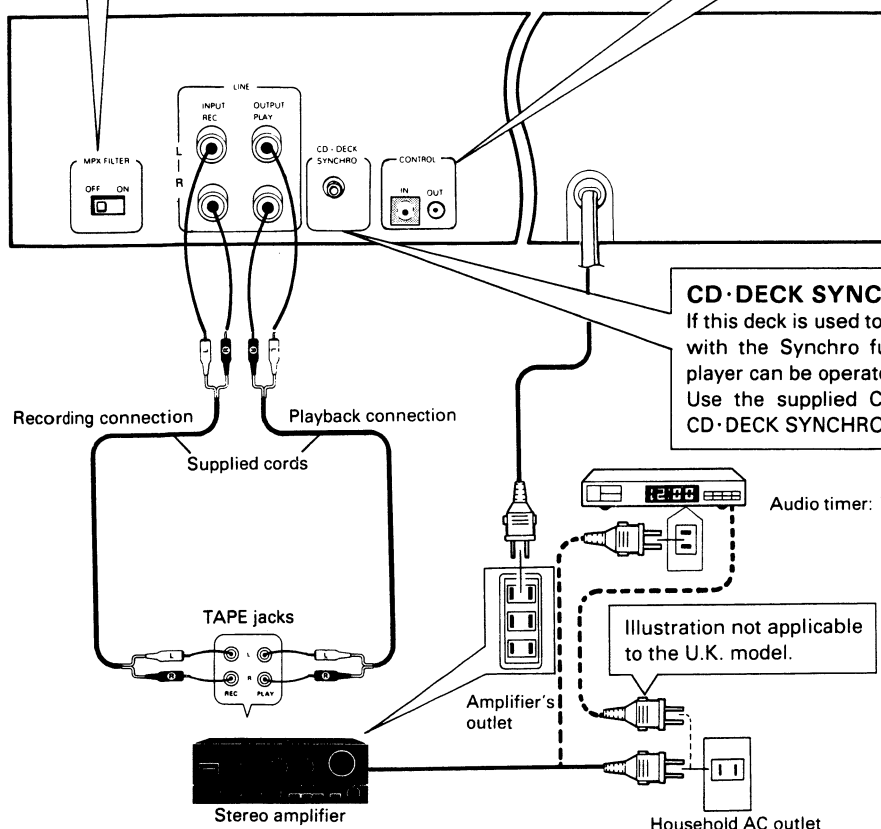
(For U.S. and Canadian models only)

CONTROL IN jack

Connect the jack to the CONTROL OUT jack of a component provided with the PIONEER System Remote Control (bearing the **SR** mark) with the supplied Remote control cord. Then, you can operate both equipment by using the system remote control.

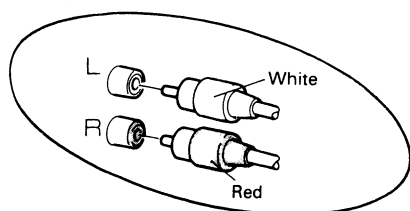
CONTROL OUT jack

Output intermediary of the remote control signals entered from the above CONTROL IN jack. Connect it to the CONTROL IN jack of another component compatible with the PIONEER System Remote Control.



CONNECTING THE INPUT/OUTPUT CORDS

Use a cord with red and white pins. Connect the white pin (L) and red pin (R) to jacks matching the colors. Always insert pins further back. For connection cords, 2 cords for recording and playback are supplied.



CONNECTION TO AN AUDIO TIMER

Refer to the instruction manual of the audio timer when connecting to an audio timer.